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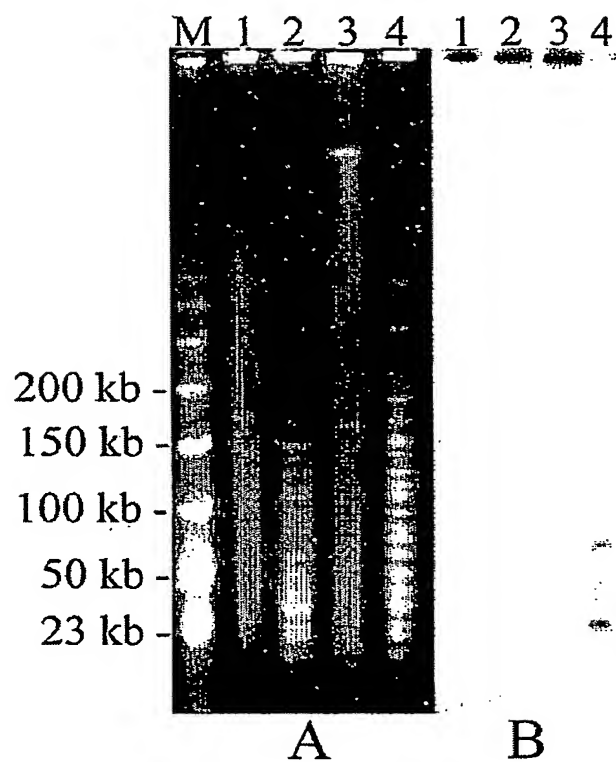


FIGURE 1A

FIGURE 1B

BEST AVAILABLE COPY

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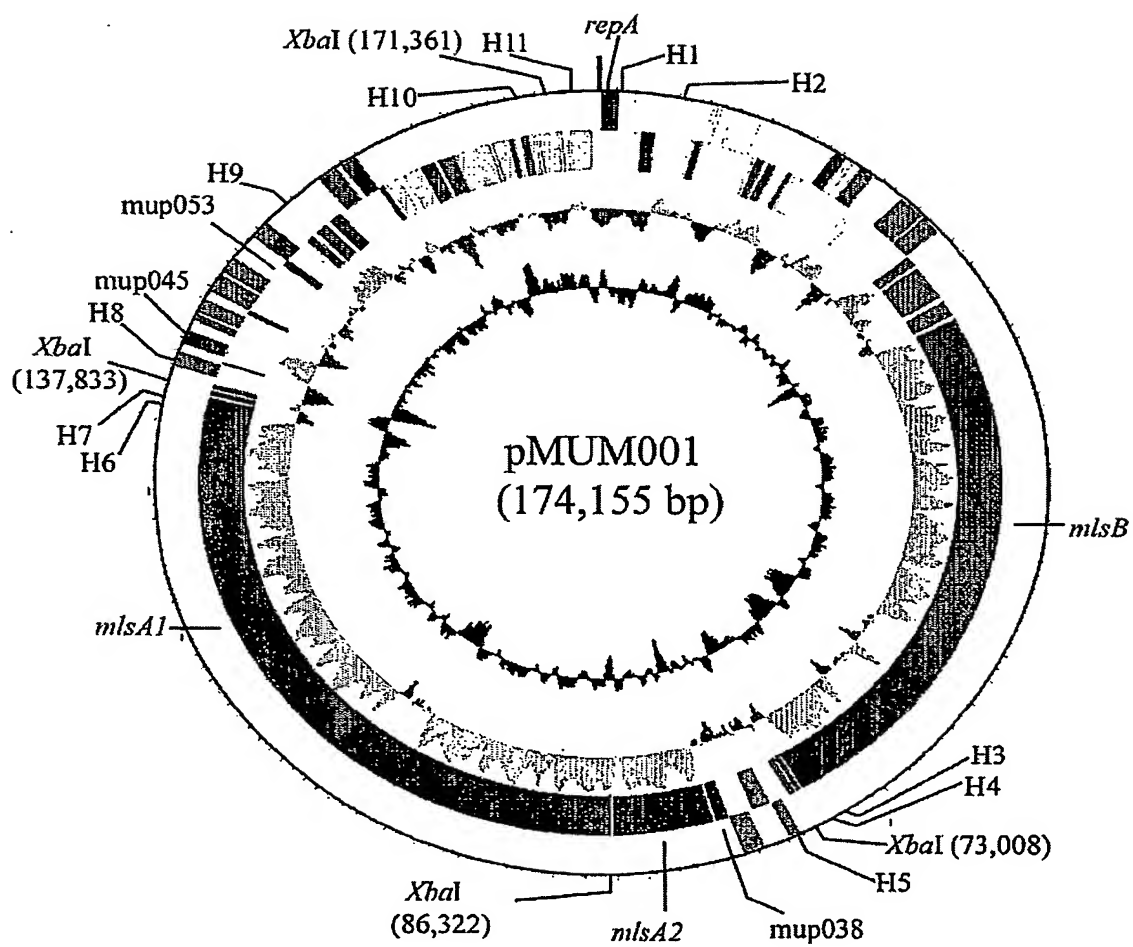


FIGURE 2

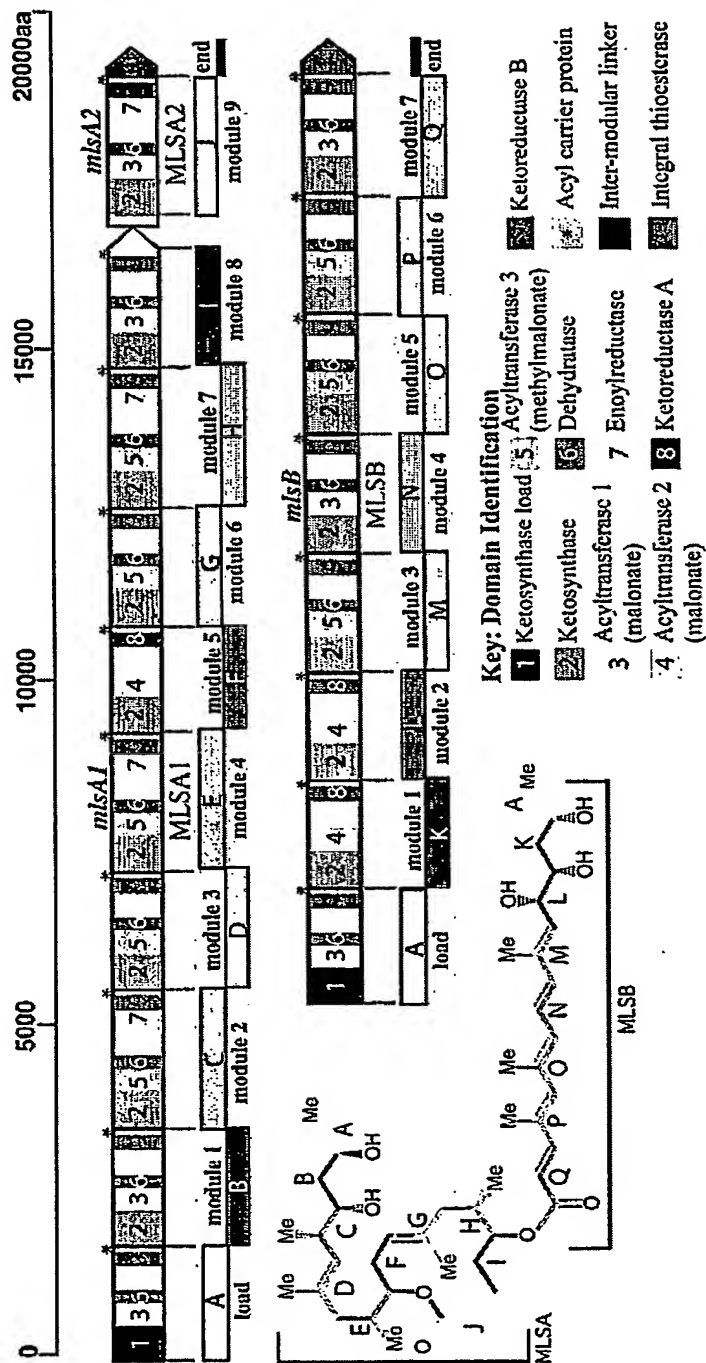


FIGURE 3

FIGURE 4A

FIGURE 4B

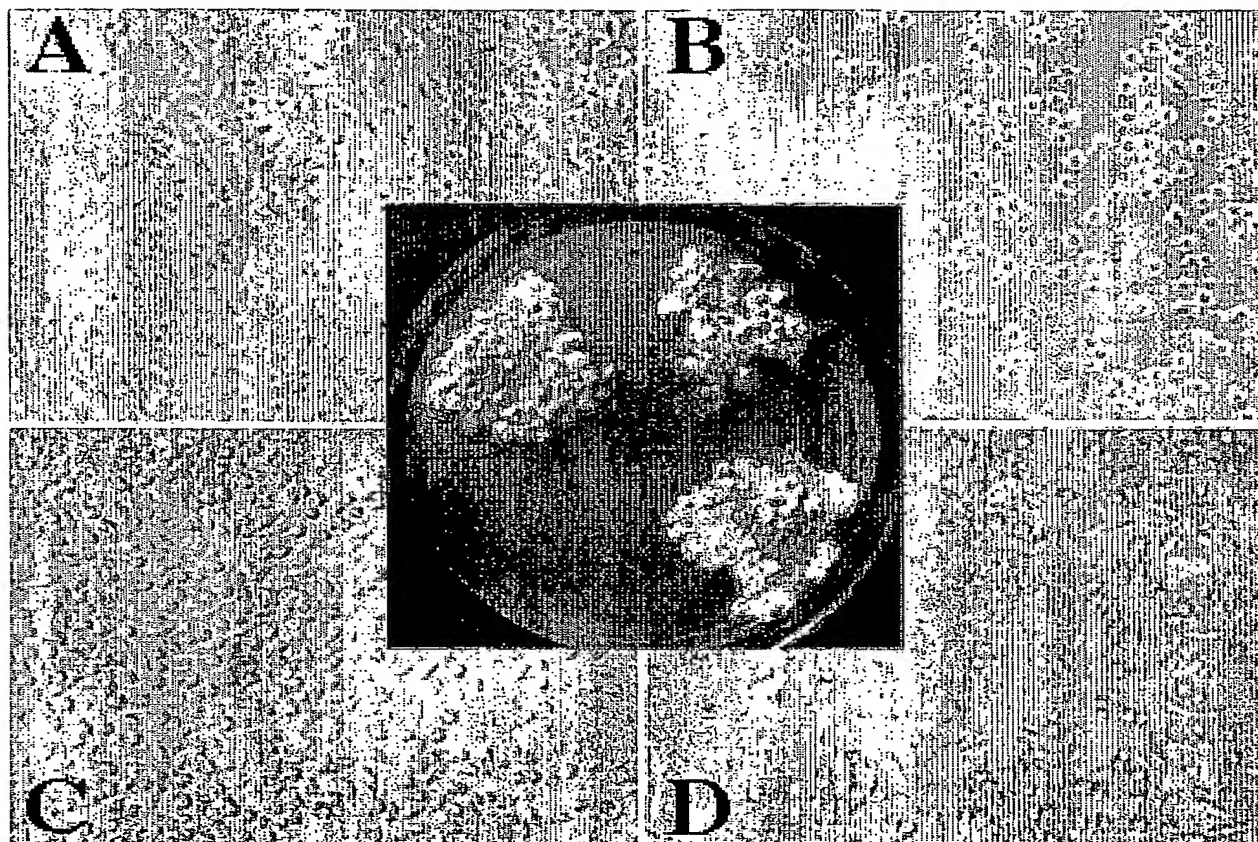


FIGURE 4C

FIGURE 4D

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FIGURE 5A

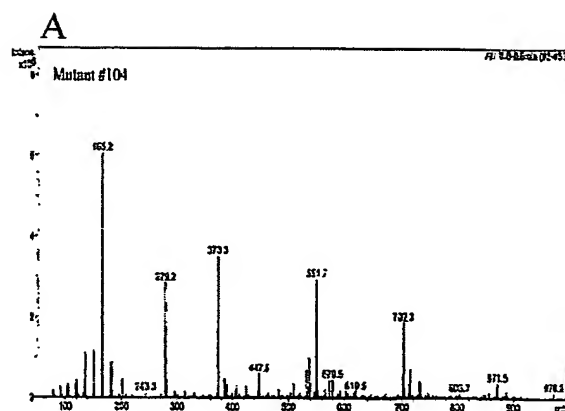


FIGURE 5B

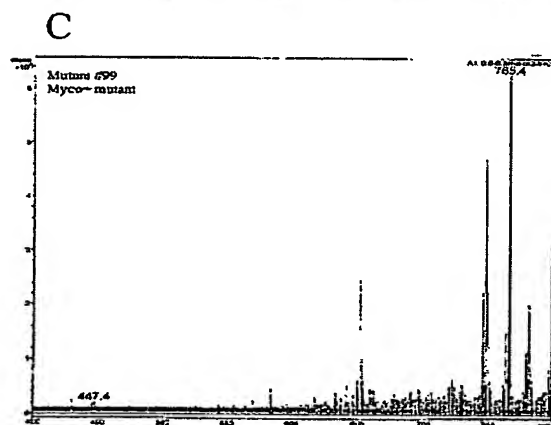
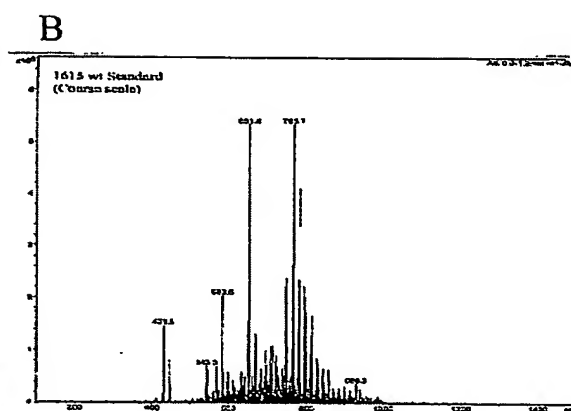


FIGURE 5C

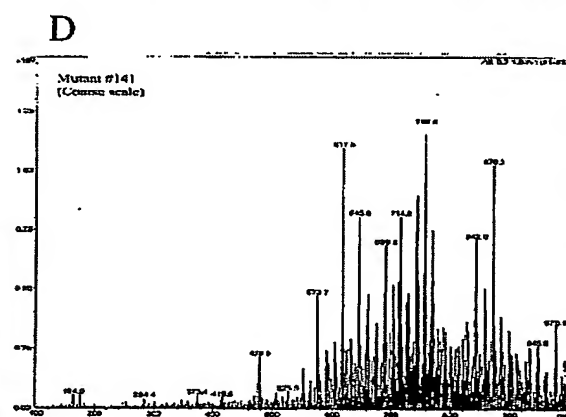


FIGURE 5D

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MslA1 gene

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151 gagatacctt ctgcacgttg gaatttagac ggcctcgttg ctcaccgact
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251 tcgaagggtt tgacgccgcg ttcttcggaa ttaaccctc cgaagctggg
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FIGURE 6

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2951 tcgctgaccg tgccggatat tcctcggtea acgaactgat cgtgcacacc
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FIGURE 6(continued)

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FIGURE 6(continued)

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FIGURE 6(continued)

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11951 cccagccac cttgcccgcg accttgacgc tcgaccaacc cagccccac
12001 atcgactggg ccagcggcac agtccgactc ctaaccgagc ccatccaatg
12051 gcccaacacc gaccaccccc gcaccgcggc ggtgtcctca ttcggcatca
12101 gcggcaccaa cgcacacctc atcctccaac aacccccac ccccgacacc
12151 acacaaaccc ccaaccccc aacaggttct gatcccgag tgggttctga
12201 ttccgcagtg ggttctgatc ccgcagtggt tgtactgggt tggcgttgt
12251 cagcgcgttc agcgcggggg ttaagcgcac aagcggcccg tctgtaccag
12301 catctcagcg cccacccccga tctggatccg atcgatgtag cccacagcct
12351 ggctaccaca cgcagccacc acccccaccg cgccaccatc accaccagca
12401 ttgagcacca cagcgaaaac aaccacgaca caaccgatgc gctggccgca
12451 ctgcacggcc tggccaacaa cggcacacac cccctgctga gcagaggcct
12501 gctgacccca cagggccccc gcaaaacagt gttcgtgttc cccggacagg
12551 gcagtcaata ccccggcgat ggcgcagatc tctaccgcca attccccgtg
12601 ttgccccacg ccctcgacgc atgcgacgca gcgttacagc ctttactgg
12651 atggctcggt ctagctgtgt tacacgacga acccgaggcc ccgtcgttgg
12701 agcgagtcga tgtggtccag cctgtgttgt tctcgggtgt ggtgtcgtta
12751 gccgcactct gccgggtggc cggaatcacc cccgatgcag tcacggcca
12801 ctcccagggc gagatcgccg cggcacatgt gccgggagcc ctgaccttgc
12851 ccgaagcagc tgcggtagt gctttgcgca gccgtgtctt gaccgacctg
12901 ccgggtgccg gtgccatggc ttcagtgtta tcgcccagg aaccactgac
12951 ccagctgctg gcacggtggg acggcaagat cactgtcgcc gcagttaacg
13001 gcccgcctag cgctgtggtc tccggcgata ccacagcgat caccgaattg
13051 ctgattacct gcgaacacga aaacatcgac gctcgcgcta tcccggtgga
13101 ctacccctct cattccccct atatggaaca catccgcat cagttcctcg
13151 acgagctacc cgagctgaca ccgcggccat caaccatcgc gatgtattcc
13201 accgtcgacg gcgaacctca cgacaccgcc tacgacacca ccacaatgac
13251 cgcggactac tggatccgca acatccgtaa cactgtccgg ttocatgaca
13301 ctgtcgctgc cctgtcggg gcgggtgagc aggttttctt ggaactttca
13351 cctcacccgg tgttgacaca agcgatcacc gacaccgtcg aacaagccgg
13401 cggcgccggc gcagcagtcg cagctctacg caaggatcgc cctgatgctg
13451 tcgcgttcgc tgcagcactc ggccagctgc actgccatgg catcagccca
13501 tccgtgaatg ttctttactg ccaggccgcg cccctcacac tgcccaccta
13551 cgctttccag catcagcggt actggctgct gccaccgcgt ggtgatttca
13601 gcggggccaa taccacgcgc atgcatccgc tgcagacac cgccaccgaa
13651 ctggccgaaa acccgcgatg ggtgttcacc gcccgatca gccacgcac
13701 ccaaccatgg ctaaacgaac acgcccgcga atcagccgtg ctgttccag
13751 gcaccggatt cgtcgagcta gcctgcatg tcgctgaccg tgccggatat
13801 tccctgggtc acgaactgat cgtgcacacc cccctgtac tcgctggcca
13851 cgacaccgcg gatctacaga tcaccgtcac cgacaccgat gacatgggce
13901 ggcagtctct taacatccac tcgcgcccac atatcgccca tgacaacacc
13951 accaccggcg atgaacaacc cgagtgggtc ctgcatgcc a ggcagtcct
14001 gaccgcacaa accaccgacc acaaccacct cccctaacc cctgtgccgt
14051 ggccctccacc cggcacagcc gcgatcgagg tggatgactt ctacgacgac
14101 ctggctgcac agggctacaa ctacggcccg acattccaag gtgtgcaacg
14151 gatatggcgt gaccacgcca caccgatgt catctacgcc gaagttgaac

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FIGURE 6(continued)

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14201 taccogaaga caccgacatc gacggctacg gcatccaccc cgccctattc
14251 gacgcgcgtt tacaccccct actcgccctg acccaacccc ccaccaacga
14301 caccgatgac accaacaccg cagacaccgg tgaccagggtg cggctgccct
14351 acgcctttac cggcatcagt ttgcacgcca cccacgccac ccgattacgg
14401 gtacggctga cccgtaccgg cgcgatgcc atcacgtgc acaccagtga
14451 caccaccgga gccccgggtg cgatcatcga ctcatgtatc acccgcccc
14501 tcaccaccgc cacagggtct gtcgggcaa ccacagcagc tggcctaacta
14551 oacctgagct ggccaccaca ccctgacacc acgaccgaca ccgacaccga
14601 caccgatgcc ctgcggtatc aggtgatcgc cgaacccact caacaactgc
14651 cccgctacct gcacgacctt cacaccagca ccgacctgca caccagcacc
14701 accgaagcag acgtggttgt gtggccggta ccggtgcccc gcaacgaaga
14751 gctccaggca caccaagcat ccgacaccgc ggtgtcttct cggatacaca
14801 ccttgaccgg ccaaactt accgtggtgc aggactggct cactacccc
14851 gaccaccgg gcacccgact ggtcatcgtg acccgccacg gcgtcagcac
14901 cagtgccccc gaccgggtcc ccgacctagc ccacgcccga gtgtggggcc
14951 tgatccgcag cgccaaaaac gaacaccccg gacgcttcac actgctcgac
15001 accgacgaca acaccaacag cgacaccctc accaccgccc taacctgcc
15051 aaccgcgaa aaccaactgg ccatacgccg cgacaccatc cacatcccc
15101 gcctgaccgg caccgctgtc ctgacaccac cggacagcgg cccctggcgc
15151 cttgacacca ccggcaaggg tgatctggcc aacctcgccc tgctaccgac
15201 cgccacact gccctggcct ctggacaaat ccgtatcgat gtccgggccc
15251 ctggtttgaa ttttcacgac gtggtcgtcg cgttggggct aatccccgac
15301 gacggattcg gcggagaagc cgccgggggtg atcagcgaga tcggtcccga
15351 cgtctacgga ttccgctgg gtgatgccgt gaccggcatg accgtctctg
15401 gtgcgtttgc cccagcaact gtgcgtgatc accgcatggt gatgacgatc
15451 ccggcccggt ggtccttccc ccaagccgca tccataccgg tggatttct
15501 gaccgcctac atcgctttgg ccgagatctc gggcctaagc cgagggaac
15551 gagtgcgtgat ccattgcggc actggcgggtg tgggtatggc tgcgattcaa
15601 ttggcacacc atttgggtgc cgaagtattc gccaccgcca gcgcgcgaa
15651 atggagcacc cttgaggcac tgggggtacc gcgcgaccat atcgcttct
15701 cgcgtactct ggacttttcc aacgcattcc tcgatgccac caacggcgcc
15751 ggtgttgatg tcgtattgaa ctgcctcagt ggtgaattcg tcgaagcatc
15801 cctagccctg ctgccccgcg gtggccattt cgtcgaaatc ggcaaaaccg
15851 acatccgtga tacggaggtc atcgccgcaa cccatcccgg cgtcatttac
15901 cgcgcctcgc atctgctcag cgtctcccc gatcacatcc agcgcacact
15951 ggcccaactg tccccactgt ttgccaccga caccctaaaa cccctaccga
16001 ccactaatta cagcatctac caagccatct cggccttacg tgacatgagt
16051 caagcccgtc acacaggcaa gatcgtgctc actgcgcggg tgggtgtaga
16101 tcctgagggc acggtgttga tcaccggggg gaccgggacg ctgggtgcct
16151 tgctcgccga gcattctggt tctgcccatt gtgtccggca tctgttgttg
16201 acctcgcggc gcggacctca ggcccacggt gccaccgatc tgcagcagcg
16251 gctcaccgat ctagggtgct atgtcaccat cacggcctgc gatatcagcg
16301 accccgaagc actggccgccc ctggtcaatt cagtgccccc acaacaccgt
16351 ttaaccgagg tagtgacac cgccgtggta ttggccgaca ccccggtcac
16401 cgagttgacc ggcgatcaac tcgaccagggt gctggccccc aaaatcgacg
16451 cggcatggca gctgcaccaa ctacactacg aacacaacct gtctgcattc
16501 atcatgttct cgtccatggc cggaatgata ggcatcccc gtctgggtaa
16551 ctacgcggca gccaacaccg cgttagatgc tctcgccgac taccgccacc
16601 gcctgggctt ccccgcgacc agcctggcct ggggctactg gcagaccgac
16651 accggtctca ccgcgatct aaccgatgta gatctagccc gcatgaccgc
16701 cctggggttg atgcccacg ccaccagcca cggactggcc ctgttcgatg
16751 ccgcctcgc caccggacag cccgtttcga taccgcccc gatcaacacc
16801 cacaccctgg cccgacacgc ccgcgacaac accctggccc cgatcctgtc
16851 tgcgctgatc accacaccac ggcccggggc ggccctctgc gcaaccgatc
16901 tcgctgcccg cctcaacgga cttagccccc aacagcaaca acaaacactg
16951 gccaccctcg tggccgoggc caccgccacc gtgctggggc accacacccc
17001 cgaaagcatc agcccagcca ccgcgttcaa agacctcgga atcgattcgc

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FIGURE 6(continued)

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17051 tgaccgccct tgaactgcgc aacaccctca cccacaacac cggcctcaac
17101 ctttcgtcca ctcttatctt cgatcacccc acaccccatg cggtagccga
17151 gcatctgctt gaacagatcc ctggcatcgg tgccctggtg ccggctccgg
17201 tggtagatcg agctggctgt accgaggagc cggtagcggt ggtggggatg
17251 gcgtgtcggt tccccgggtg tgtcgcatca gcggatcagt tgtgggactt
17301 ggtgatcgct ggccgtgatg tggtaggtaa ttttcgggcc gatcggggtt
17351 gggatgtgga gggactgttt gatcccgatc cggacgcggg cggcaaaacc
17401 tacacccggt acggcgcggt ccttgacgat gcggcagggt ttgatgccgg
17451 gttcttttgg atctctccac gggaggcagc cgcgatggac ccccagcagc
17501 ggctgctgct ggaggtgtgc tgggaagcgc tagaaaccgc gggattatccc
17551 gcgcacacct tggccggcac ctccaccggg gtattcgctc gagccggggc
17601 ccagtcctac ggcgccacca actccgatgg cgtgagggg tatgcgatga
17651 ccggcggcgc gatcagcgtc atgtccggcc gtatcgcta cacttgggc
17701 ctagaaggtc cagcgatcac cgttgacacc gcctgctcgt catcgctggt
17751 ggcaattcac ctggcctgcc aatccttacg caacaacgaa tcccagctag
17801 cactggccgg cggcgtcacc gtgatgagca cactgcgat tttaccgag
17851 ttctcccggc aacgcggcct ggccccagat ggacgctgca aagccttcgc
17901 cgctaccgcc gatggcaccg gctttggtga aggcgcggcg gtcttggtcc
17951 ttgaacggct ctccgaggcc cgcgcgaaca accaccggg ccttgcgatc
18001 gtcgctggat cggcgatcaa ccaagacggc gcatccaacg gactgaccgc
18051 accccaggc ccgtcacaac aacgcgtcat caaccaagca ctagccaacg
18101 ccggcctcac ccacgaccag gtcgacggcg tcgaagcca cggcaccggc
18151 accacactgg gtgaccccat cgaagccagc gccctacacg ccacctacgg
18201 ccaccaccac acgcccgatc aaccgctttg gctgggatcc atcaaataca
18251 acatcgccca caccgaagcc gccgcggcg ccgcgggtgt ggtcaagatg
18301 atccaagcca tcaccacgc cacttgccc gccaccttgc acgtcgacca
18351 acccagcccc cacatcgact ggtccagcgg cacagtccga ctctaaccg
18401 agcccatcca atggcccaac accgaccacc ccgcaccgc ggcggtgtcc
18451 tcattcggca tcagcggcac caacggccac ctcatctccc aacaaccccc
18501 caccocggac accacacaaa ccccaaacac cacaacaggt tctgatcccg
18551 cagtgggttc tgattccgca gtgggttctg atccgcaggt ggggtgtactg
18601 gtgtggccgt tgtcagcgcg tttagcgccg gggttaagcg cacaagcggc
18651 ccgtctgtac cagcatctca gcgccacccc cgatctggat ccgatcgatg
18701 tagccacag cctggctacc acacgcagcc accaccccca ccgcgccacc
18751 atcaccacca gcattgagca ccacagcgaa aacaaccacg acacaaccga
18801 tgcgctggcc gcactgcacg ccctggccaa caacggcaca cccccctgc
18851 tgagcagagg cctgctgacc ccacagggcc cgggcaaaac agtggtcgtg
18901 ttcccggac agggcagtc atacccggc atgggcgcag atctctaccg
18951 ccaattcccc gtgttcgccc acgccctcga cgcgtgcag gcagcgttac
19001 agcctttcac tggatggtcg gtgctagctg tgttacacga cgaacccgag
19051 gcccgcgtgt tggagcgggt cgatgtggtc cagcctgtgt tgttctcggt
19101 gatggtgtcg ttagccgcac tctggcgggt ggccggaatc acccccgatg
19151 cagtcatcgg cactcccag ggcgagatcg ccgcggcaca tgtggccgga
19201 gccctgacct tgcccgaagc agctgcggta gtggctttgc gcagccgtgt
19251 cttgaccgac ctggccgggt ccggtgccat ggcttcagt gctatgcccg
19301 aggaaccact gaccagctg ctggcacggg gggacggcaa gatcactgtc
19351 gccgcagtta acggccccgc tagcgtgtg gtctccggcg ataccacagc
19401 gatcaccgaa ttgctgatta cctgcgaaca cgaaaacatc gacgctcgcg
19451 ctatcccggg ggactacccc tctcattccc cctatatgga acacatccgc
19501 catcagttcc tcgacgagct acccgagctg acaccggggc catcaaccat
19551 cgcgatgtat tccaccgtcg acggcgaacc tcacgacacc goctacgaca
19601 ccaccacaat gaccgcggac tactggtacc gcaacatccg taacactgtc
19651 cggttocatg aactgtcgc tgccctgctc ggggcgggtg agcaggtttt
19701 cctggaactt tcacctcacc cgggtgtgac acaagcgatc accgacaccg
19751 tcgaacaagc cggcggcggc ggcgcagcag tgccagctct acgcaaggat
19801 cgccctgatg ctgtcgcgtt cgtgcagca ctccggccagc tgcaactgcca

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FIGURE 6(continued)

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19851 tggcatcagc ccacctctgga atgttcttta ctgccaggcc cgccccctca
19901 cactgcccac ctacgctttc cagcatcagc gttactggct gctgcccacc
19951 gctggtgatt tcagcggggc caataccac gccatgcac cgctgctaga
20001 caccgcccac gaactggccg aaaaccgcg atgggtgttc accggccgga
20051 tcagcccacg caccacaacca tggctaaccg aacacgccgt cgaatcagcc
20101 gtgctgttcc caggcaccgg atttgtcgag ctacgctgc atgtcgctga
20151 ccgtgccgga tattcctcgg tcaacgaact gatcgtgcac accccccctgc
20201 tgctcgctgg ccacgacacc gcggatctac agatcacctg caccgacacc
20251 gatgacatgg gccggcagtc tcttaacatc cactcgcgcc cacatatcgg
20301 ccatgacaac accaccaccg gcgatgaaca acccgagtgg gtcctgcatg
20351 ccagcgcagt cctgaccgca caaaccaccg accacaacca cctcccccta
20401 acgcctgtgc cgtggcctcc acccggcaca gccgcgatcg aggtggatga
20451 cttctacgac gacctggctg cacagggcta caactacggc ccgacattcc
20501 aagggtgtga accgatatgg cgtgaccacg ccacaccgga tgtcatctac
20551 gccgaagtgt aactaccgga agacaccgac atcgacggct acggcatcca
20601 ccccgcccta ttcgacgpcg ctttacaccc cctactcgcc ctgaccaaac
20651 cccccaccaa cgacaccgat gacaccaaca ccgcagacac cggggaccag
20701 gtgcggctgc cctacgcctt taccggcatc agtttgacg ccaccacgc
20751 cccccgattg cgggtacggc tgaccctgac cggcgccgat gccatcaccg
20801 tgcacaccag tgacaccacc ggagccccgg tggcgatcat cgactcattg
20851 atcaccggcc ccctcaccac cgccacaggg tctgctccgg caaccacagc
20901 agctggccta ctacacctga gctggccacc acacctgac accacgaccg
20951 acaccgacac cgacaccgat gccctgcggt atcgggtgat cgccgaaccc
21001 actcaacaac tgccccgcta ctgcacgac ctacacacca gcaccgacct
21051 gcacaccagc accaccgaag cagacgtggt tgtgtggccg gtaccggtgc
21101 ccagcaacga agagctccag gcacaccaag catccgacac cgcggtgtct
21151 tctcggtac acacctgac ccgcaaaca cttaccgtgg tgcaggactg
21201 gctcactcac cccgacacca ccggcaccgg actggtcatc gtgaccggcc
21251 acggcgtcag caccagtgc caccgaccgg tccccgacct agcccacgcc
21301 gcagtgtggg gcctgatccg cagcgcccaa aacgaacacc ccggacgctt
21351 cacactgctc gacaccgacg acaacaccaa cagcgacacc ctaccaccgg
21401 ccctaaccct gccaacccgc gaaaaccaa tggccatacg ccgcgacacc
21451 atccacatcc cccgcctgac ccgacacagc agtgacgggt cgctcactgc
21501 gccggtggtg gtagatcctg agggcacgggt gttgatcacc ggggggaccg
21551 ggacgctggg tgccctgttc gccgagcatc tggtttctgc ccatggtgtc
21601 cggcatctgt tgttgacctc gcggcgcgga cctcaggccc acggtgccac
21651 cgatctgcag cagcggctca ccgatctagg tgctcatgtc accatcacgg
21701 cctgcgatat cagcgacccc gaagcactgg ccgccctggt caattcagtg
21751 cccacacaac accgtttaac cgcggtagtg cacaccggcg cggatttggc
21801 cgacaccgg gtcaccgagt tgaccggcga tcaactcgac caggtgctgg
21851 cccccaaaat cgacgcgga tggcagctgc accaactcac ctacgaacac
21901 aacctgtctg cattcatcat gttctcgtcc atggccggaa tgataggcag
21951 tccccggtcag ggtaactacg cggcagccaa caccgcgtta gatgctctcg
22001 ccgactaccg ccaccgcctg ggcttgcccg cgaccagcct ggccctggggc
22051 tactggcaga ctacaccgg tctcaccgg catctaaccg atgtagatct
22101 agcccgcag acccgccctg gtttgatgcc catcgccacc agccacggac
22151 tggccctggt cgatgccgcc ctgcgccacc gacagcccg ttcgataccc
22201 gcccgcgata acacccacac cctggcccga cagcccgcg acaacacctt
22251 ggcccgcata ctgtctgcgc tgatcaccac accacggcgc cggcgccgct
22301 ctgcgcgaac cgatctcgct gccgcctca acggacttag cccccaacag
22351 caacaacaaa cactggccac cctcgtggcc gcggccaccg ccaccgtgct
22401 gggccaccac acccccgaaa gcacagccc agccaccgg ttcgaagacc
22451 tcggaatcga ttcgctgacc gcccttgaac tgcgaacac cctcaccac
22501 aacaccggcc tggatctgcc cccaccctc atcttcgac accccacacc
22551 caccgcgcta acccaacacc tgcacaccgg actcaccacc ggtgccctgg
22601 tgccggctcc ggtggtgatc gcagctggtc gtaccgagga gccgggtggc

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FIGURE 6(continued)

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22 651 gtggtgggga tggcgtgtcg tttccccggt ggtgtcgcat cagcggatca
22 701 gttgtgggac ttggtgatcg ctggccgtga tgtggtgggt aattttccgg
22 751 ccgatcgggg ttgggatgtg gagggactgt ttgatcccga tccggacgcg
22 801 gtcggcaaaa cctacacccg ttacggcgcg ttccttgacg atgcggcagg
22 851 ttttgatgcc gggttctttg ggatctctcc acgggaggca cgcgcgatgg
22 901 acccccagca gcggtgctg ctggagggtg gctgggaagc gctagaaacc
22 951 gcgggtattc ccgcgcacac cttggccggc acctccaccg gggatttcgt
23 001 cggagcctgg gccagtcct acggcgccac caactccgat gacgctgagg
23 051 ggtatgcgat gaccggcggc gcgatcagcg tcatgtccgg ccgtatcgcc
23 101 tacaccttgg gcctagaagg tccagcgatc accgttgaca ccgcctgctc
23 151 gtcacgctg gtggcaattc acctggcctg ccaatcctta cgcaacaacg
23 201 aatcccagct agcaactggc ggccggcgtc ccgtgatgag cacacctgcg
23 251 gttttcaccg atttctcccg ccaacgcggc ctggccccag atggacgctg
23 301 caaagccttc gcgctaccg ccgatggcac cggctttggg gaaggcgccg
23 351 cggctctggg ccttgaacgg ctctccgagg cccgcgcgaa caaccacccg
23 401 gtccttgcca tcgtcgctgg atcggcgatc aaccaagacg gcgcatacaa
23 451 cggactgacc gcacccacag gcccgtcaca acaacgcgtc atcaaccaag
23 501 cactagccaa cgcgggcctc acccacgacc aggtcgacgc cgtcgaagcc
23 551 cacggcaccg gcaccacact gggtgacccc atcgaagccg gcgcctaca
23 601 cgccacctac ggccaccacc acacgcccg tcaaccgctt tggctgggat
23 651 ccatcaaate caacatcgcc cacaccaag ccgcgcgcgg cgcgcgcgg
23 701 gtggtcaaga tgatccaagc catcacccac gccaccttgc ccgccacctt
23 751 gcacgtcgac caaccagcc cccacatcga ctggtccagc ggcacagtcc
23 801 gactcctaac cgagcccatc caatggccca acaccgacca ccccgccacc
23 851 gcggcggtgt cctcattcgg catcagcggc accaagcccc acctcatcct
23 901 ccaacaaccc cccacccccc acaccacaca aacccccaac accacaacag
23 951 gttctgatcc cgcagtgggt tctgatcccg cagtgggtgt actggtgtgg
24 001 ccgttgtcag cgcgttcagc gccgggggta agcgcacaag cggcccgtct
24 051 gtaccagcat ctcagcgccc accccgatct ggatccgac gatgtagccc
24 101 acagcctggc taccacacgc agccaccacc cccaccgcgc caccatcacc
24 151 accagcattg agcaccacag cgaaaacaac cagcacaca ccgatgcgt
24 201 ggccgcactg cagccctgg ccaacaacgg cacacacccc ctgctgagca
24 251 gaggcctgct gacccacacg ggccccggca aaacagtgtt cgtgttcccc
24 301 ggacagggca gtcaataccc cggcatgggc gcagatctct accgccaatt
24 351 ccccggttcc gccacgccc tcgacgcatg cgacgcagcg ttacagcctt
24 401 tcactggatg gtcggtgcta gctgtgttac acgacgaacc cgaggccccg
24 451 tcgttgagag gggtcgatgt ggtccagcct gtgttgttct cgggtgatgg
24 501 gtcgttagcc gcactctggc ggtgggcccg aatcaccccc gatgcagtca
24 551 tcggccactc ccagggcgag atcgccgcgg cacatgtggc cggagccctg
24 601 accttgcccg aagcagctgc ggtagtggct ttgcgcagcc gtgtcttgac
24 651 cgacctggcc ggtgccggtg ccatggcttc agtgctatcg cccgagggaac
24 701 cactgaccca gctgctggca cgggtgggac gcaagatcac tgtcgccgca
24 751 gttaacggcc ccgctagcgc tgtggtctcc ggcgatacca cagcgatcac
24 801 cgaattgctg attacctgcg aacacgaaaa catcgacgct cgcgctatcc
24 851 cgggtggacta cccctctcat tccccctata tggaacacat ccgccatcag
24 901 ttctctgaag agctacccga gctgacaccg cggccatcaa ccatcgcgat
24 951 gtattccacc gtcgacggcg aacctcacga caccgcctac gacaccacca
25 001 caatgacccg ggactactgg taccgcaaca tccgtaacac tgtccggttc
25 051 catgacactg tcgctgccct gcctggggcg ggtgagcagg ttttcttggg
25 101 actttcacct caccgggtgt tgacacaagc gatcacgcag accgtcgaac
25 151 aagccggcgg cggcggcgca gcagtgccag ctctacgcaa ggatcgccct
25 201 gatgctgtcg cgttcgctgc agcactcggc cagctgcact gccatggcat
25 251 cagcccatcc tggaatgttc tttactgcca ggcccgcccc ctcacactgc
25 301 ccacctacgc tttccagcat cagcgttact ggctgctgcc caccgctggg
25 351 gatttcagcg gggccaatac ccacgccatg catccgctgc tagacaccgc
25 401 caccgaactg gccgaaaacc gcggatgggt gttcacccgc cggatcagcc

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FIGURE 6(continued)

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25451 cacgcaccca accatggcta aacgaacacg ccgtcgaatc agccgtgctg
25501 ttcccaggga ccggatttgt cgagctagcg ctgcatgtcg ctgaccgtgc
25551 cggatattcc tcgggtcaacg aactgatcgt gcacaccccc ctgctactcg
25601 ctggccacga caccgcggat ctacagatca ccgtcaccca caccgatgac
25651 atggggccggc agtctcttaa catccactcg caccacata tcggccatga
25701 caacaccacc accggcgatg aacaacccga gtgggtcctg catgccagcg
25751 cagtcttgac cgcacaaacc accgaccaca accacctccc cctaacgcct
25801 gtgccgtggc ctccacccgg cacagccggc atcgaggtgg atgacttcta
25851 cgacgacctg gctgcacagg gctacaacta cggcccga ca ttccaaggtg
25901 tgcaacggat atggcgtagc cagccacac ccgatgtcat ctacgccgaa
25951 gttgaactac ccgaagacac cgacatcgac ggctacggca tccaccccg
26001 cctattcgac gccgctttac acccctact cgccctgacc caacccccca
26051 ccaacgacac cgatgacac aacaccgag acaccggtga ccagggtgcg
26101 ctgccctacg cctttaccgg catcagtttg cagccacccc acgccacccg
26151 attgcccgtgta cggctgaccc gtaccggcgc cgatgccatc accgtgcaca
26201 ccagtgcacac caccggagcc ccggtggcga tcatcgactc attgatcacc
26251 cgccccctca ccaccgccac agggctctgt ccggcaacca cagcagctgg
26301 cctactacac ctgagctggc caccacaccc tgacaccacg accgacaccg
26351 acaccgacac cgatgccctg cggtatcagg tgatcgccga acccactcaa
26401 caactgcccc gctacctgca cgacctacac accagcaccg acctgcacac
26451 cagcaccacc gaagcagacg tgggtgtgtg gccgtaccg gtgcccagca
26501 acgaagagct ccaggcacac caagcatccg acaccgcgg gtcttctcgg
26551 atacacaccc tgacccgcc aacacttacc gtgggtgcagg actggctcac
26601 tcaccccgac accaccggca cccgactggt catcgtgacc cgccacggcg
26651 tcagcaccag tgcccaacgac ccggtccccg acctagccca cgccgcagt
26701 tggggcctga tccgcagcgc ccaaacgaa caccgccgac gcttcacact
26751 gctcgacacc gacgacaaca ccaacagcga caccctcacc accgccctaa
26801 ccctgccaac ccgcgaaaac caactggcca tacgccgcga caccatccac
26851 atcccccgcc tgacccgcac cgctgtcctg acaccaccg acagcggccc
26901 ctggcgccct gacaccaccg gcaaggggtga tctggccaac ctgcgccctg
26951 taccgacccg ccacactgcc ctggcctctg gacaaatccg tatcgatgtc
27001 cgggcgcgtg gtttgaattt tcacgacgtg gtcgctcgct tggggcta
27051 ccccgacgac ggattcggcg gagaagccgc cggggtgatc agcgagatcg
27101 gtcccgacgt ctacggatc gccgtgggtg atgccgtgac cggcatgacc
27151 gtctctgggt cgtttgcccc cagcactgtc gctgatcacc gcatgggtgat
27201 gacgatcccg gcccggtggt ccttccccca agccgcattc ataccggtg
27251 tattroctgac cgctacatc gctttggccg agatctcggg cctaagccga
27301 gggcaacgag tgctgatcca tgccggcact ggcggtgtgg gtatggctgc
27351 gattcaattg gcacaccatt tgggtgccga agtattcgcc accgccagcg
27401 ccgcgaaatg gagcaccctt gaggcactgg gggtaccgcg cgaccatata
27451 gcttctctgc gtactctgga cttttccaac gcattcctcg atgccacca
27501 cggcgccgggt gttgatgtcg tattgaactg cctcagtgggt gaattcgtcg
27551 aagcatccct agccctgctg ccccgcggtg gccatttcgt cgaaatcggc
27601 aaaacgaca tccgtgatac cgaggtcatc gccgcaacce atcccgcggt
27651 catttaaccgc gccctcgatc tgctcagcgt ctcccccgat cacatccagc
27701 gcacactggc ccaactgtcc ccactgtttg ccaccgacac cctaaaaccc
27751 ctaccgacca ctaattacag catctaccaa gccatctcgg ccttacgtga
27801 catgagtcac gcccgtcaca caggcaagat cgtgctcact ggcgggtgg
27851 tggtagatcc tgagggcacg gtgttgatca ccggggggac cgggacgctg
27901 ggtgccttgt tcgccgagca tctggtttct gcccatggtg tccggcatct
27951 gttgttgacc tcgcggcgcg gacctcaggc ccacgggtgcc accgatctgc
28001 agcagcggct caccgatcta ggtgctcatg tcaccatcac ggctgcgat
28051 atcagcgacc ccgaagcact ggccgcccct gtcaattcag tgccacaca
28101 acaccgttta acccggttag tgacaccgc cgggtattg gccgacccc
28151 cggtcaccga gttgaccggc gatcaactcg accaggtgct gggcccaaaa
28201 atcgacgcgg catggcagct gcaccaactc acctacgaac acaacctgtc
28251 tgcatcctac atgttctcgt ccatggccgg aatgataggc agtcccggtc

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FIGURE 6(continued)

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28301 agggtaacta cgccgcagcc aacaccgcgt tagatgctct cgccgactac
28351 cgccaccgcc tgggcttgcc cgcgaccagc ctggcctggg gctactggca
28401 gactcacacc ggtctcaccg cgcattctaac cgatgtagat ctagcccgca
28451 tgacccgcct gggtttgatg cccatcgcca ccagccacgg actggccctg
28501 ttcgatgccg ccccgccac cggacagccc gtttcgatac ccgccccgat
28551 caacacccac accctggccc gacacgcccg cgacaacacc ctggccccga
28601 tcctgtctgc gctgatcacc acaccacggc gccgggcggc ctctgccgca
28651 accgatctcg ctgcccgcct caacggactt agccccaac agcaacaaca
28701 aacactggcc accctcgtgg ccgcggccac cgccaccgtg ctgggccacc
28751 acacccccga aagcatcagc ccagccaccg cgttcaaaga cctcggaatc
28801 gatctcgctga ccgcccttga actgcgcaac accctcacc acaacaccgg
28851 cctcaacctt tcgtccactc ttatcttcga tcaccccaca ccccatgagg
28901 tggccgagca tctgcttgaa cagatccctg gcatcggtgc cctgggtgccc
28951 gctccggtgg tgatcgagc tggtcgtacc gaggagccgg tggcggtggt
29001 ggggagtggc tgtcgtttcc ccggtggtgt cgcattcagc gatcagttgt
29051 gggacttggg gatcgctggc cgtgatgtgg tgggtaattt tccggccgat
29101 cgggggttgg atgtggagg actgtttgat cccgatccgg acgcggtcgg
29151 caaaacctac acccgttacg gcgcgttcct tgacgatgcg gcaggttttg
29201 atgccggggt ctttgggatc tctccacggg aggcacgcgc gatggacccc
29251 cagcagcggc tgcgtgctga ggtgtgctgg gaagcgctag aaaccgcggg
29301 tatctccgcg cacaccttgg ccggcacctc caccggggta ttcgtcggag
29351 ccggggccca gtccctacgg gccaccaact ccgatgacgc tgaggggtat
29401 gcgatgaccg gcggcgcgac tagcgtcatg tccggccgta tgcctacac
29451 cttgggccta gaaggtccag cgatcacctg tgacaccgcc tgcctgcat
29501 cgctgggtgg aattcacctg gcctgccaat ccttacgcaa caacgaatcc
29551 cagctagcac tggccggcgg cgtcacctg atgagcacac ctgcggtttt
29601 caccgagttc tcccgccaac gcggcctggc ccagatgga cgtgcaaag
29651 ccttcgccgc taccccgcat ggcaccggct ttggtgaagg cgcgcgggtc
29701 ttggtccttg aacggctctc cgaggccgcg cgacaacaac acccggtcct
29751 tgcgatcgtc gctggatcgg cgatcaacca agacggcgca tccaacggac
29801 tgaccgcacc ccacggcccg tcacaacaac gcgtcatcaa ccaagcacta
29851 gccaacgcgg gctcaccca cgaccaggtc gacgcgctcg aagccacgg
29901 caccggcacc aactgggtg accccatcga agccggcgcc ctacacgcca
29951 cctacggcca ccaccacag cccgatcaac cgctttgggt gggatccatc
30001 aaatccaaca tcggccacac ccaagccgcc gccggcgccg ccggtgtggt
30051 caagatgate caagccatca cccacgccac cttgcccgcc accttgacg
30101 tcgaccaacc cagccccac atcgactggt ccagcgccac agtccgactc
30151 ctaaccgagc ccatccaatg gcccaacacc gaccaccccc gcaccgcggc
30201 ggtgtcctca ttcggcatca gcggcaccaa cgcccacctc atcctccaac
30251 aacccccac ccctaaccac acacaaacc cagaggactg cagccccga
30301 caatctccct gcgcaacaat caccgatgca ggcacgggat tatcgttgt
30351 gccctgggtg atttcagcga agtcggtga ggcgttgtct gcgcaggcga
30401 gccgattggt gacgcgcctt gacgatgatc cagttgtcga tgcaatcgac
30451 ctgggggtgt cattgatagc cactcgatcg atgtttgagc atcgcgagt
30501 agttgtgggt gcggatcgtc accagttgca gcgcgggttg gccgagttg
30551 cttctggtaa cttgggcgcc gatgtagtgg tgggcggggc ccgcgcagcg
30601 ggcgagactg taatggtgtt tcccggtcag ggatcacagc ggttgggcat
30651 gggcgcgagc ctttatgaac aattcccgg attcgcggcg gcgtttgatg
30701 acgttggtga tgcgtggac cagtatctgc ggttgccgct acgccaagt
30751 atgtggggtg acgatgaagg cctgctcaat tcaacggagt tcgccagcc
30801 gtctgtgttt gctgtcgagg tcgcaactgt tgcgttgctg cgcttctggg
30851 gtgtcgcttc ggattacgtg ataggccatt cggtaggaga gctggccgct
30901 gcacaagtgg ctggcgtttt gagcctgcag gacgcggcta aattagtttc
30951 agcgcggggg cgactgatgc aggcctgcc cgccgggtga gcgatggtcg
31001 cggtagccgc cagccagcat gaagtcgagc ctttgcgtgt tgaaggggtc

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FIGURE 6(continued)

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31051 gatatcgcg   cgctcaatgc   gccaggggtca   gttgtgatct   ctggtgatca
31101 ggcggcagtc   cgtttgatcg   ctaatcgatt   ggcggatagg   ggctacaggg
31151 cgcacgaact   tgcggtttcg   catgccttct   attcatcggt   gatggagccg
31201 atgttgagag   agttcgctcg   gctcgcttct   gaaatcggtg   tggagcaacc
31251 gcagattcca   ctgatttcga   acgtgactgg   tcagctggcc   aacgccgact
31301 acgggtcggc   aggttactgg   gtggaccaca   tccgccgtcc   agtccgtttc
31351 gccgatagtg   tcgcttcgtt   ggaagccatg   ggggctagct   gcttcattga
31401 agtcggtcca   gccagcgggt   tgggcgcagc   tatcgagcaa   tccttgaaat
31451 ctgccgagcc   gaccgtgtca   gtgtcggcac   tgtccaccga   taaacctgaa
31501 tccgtcgccg   tattgcgcgc   tgcagcacga   ctttccacct   ccggcattcc
31551 tgtggattgg   cagtcgggtg   tcgacggccg   cagcaccagg   acagttaacc
31601 tgcccaccta   cgccttccag   cggcaacggt   tctggctcga   cgccaaccgt
31651 atcggtaacg   gcgatcccgc   cagtcaacca   caggccaga   acgttgaatc
31701 ccgtttttgg   gaggcggtcg   agcgggaaga   cgttgatggc   ttggctgatt
31751 ctataggtgt   caccgccagt   gccatgcaga   ccgtgctacc   tgcattgtct
31801 tcatggcgtc   gcgcggagcg   cacacagtcc   gagcttgatt   cctggcgcta
31851 tcaggtgaca   tggctgtctt   cccagcaac   gccgagttcg   atcacgctgt
31901 ccggcatttg   gttgctgata   gttccaagcg   aacttgcaaa   gactgacca
31951 gtaattggat   gtgctgcagc   gctcgaagcg   cacggcgcc   tagtcacgat
32001 tatcacaatt   ttcgagccgg   acttcaatcg   ctcatgatg   ggcgcttccc
32051 taaaagatat   cggttcacac   atatctggtg   tcatacggt   cttagggatt
32101 cacgggtccg   aattctccga   tagcggcgcg   gtcaagacat   taaatcttgt
32151 gcaagcaatg   ggcatgtcc   acttagacgt   tcctttgtgg   tgcctaacgc
32201 agggcgcggt   atcgatcagc   gccgacgatt   tgatccgatg   ctgctcagca
32251 gccctggtgt   ggggtctggg   gagagtcgtc   gcattagagc   acccgggatc
32301 gtgggggtgg   ttagtagacc   tccccgagtc   acccgacgat   gcagcatggg
32351 agcgcttggt   cgcctctctc   gcgcagccga   cggatgaaga   tcagtttgcg
32401 atcaggccgt   ctgggggttt   cctacggaga   ttgatccacg   ccccggaac
32451 cagcacatcc   aaatcctcga   ccgcgtgggc   tccgaggggg   accgtgttaa
32501 tcacaggcgg   cacaggcgcg   ttaggcgcac   acgtcgcaag   gtggttggcc
32551 cacaaatatg   aatcggtaga   ttgtctctta   accagccgtc   gcgggatggc
32601 agccgatgga   gctacagagc   tagtggatga   cctccgcacg   gctggcgcca
32651 gtgtgacagt   gcacgcctgc   gacgtgacag   accgcacttc   agtcgaggct
32701 gcaatagcag   gtaaatccct   tgatgcggtc   tttcatcttg   caggacgaca
32751 ccagccaact   ctgctaacag   aactcgagga   cgaatccttt   agtgacgaat
32801 tggcgccgaa   ggttcacggt   gcccaagtat   tgagtacat   cacgtctaac
32851 ctcacactat   cagcgtttgt   catgttctcg   tcagtagccg   gaatctgggg
32901 cggcaaaagt   caaggcgcat   atgctgccgc   taacgcattc   ttagattcgc
32951 tcgccgagaa   acggcgcacg   ttgggggttac   cagcaacatc   ggtcgcttgg
33001 ggactgtggg   ctggcgcgcg   catgggagag   cggccatccg   cttcgggact
33051 aaaccttatt   ggcttgaaat   cgatgtcagc   agatttagct   gtgcaggcgc
33101 taagcgacgc   cattgacaga   ccgcaagcaa   cattgactgt   tgcgagcgtc
33151 aactgggatc   ggttctaccc   cacattcgct   ttggcgcgac   cgaggccctt
33201 cctacacgaa   atcacagagg   taatggctta   ccgcgagtcg   atgcgctcaa
33251 gctctgcata   gacggcgacg   ctcctgacga   gcaaattagc   cggactaacg
33301 gcgacagaac   agcgtgcagt   cacccggaag   ttggtccttg   atcaagccgc
33351 atccgttctc   gggtagccct   caactgagag   tctcgatact   catgagtcac
33401 tcaaagacct   cggatttgat   tcgtagccg   ccttgaact   gcgcgaccac
33451 ctccaaactg   cgaccggcct   caacctttcg   tccactctta   tcttcgatca
33501 cccacacacc   catgcgggtg   ccgagcatct   gcttgaacag   atccctggca
33551 tcggtgccct   ggtgccggct   ccggtggtga   tcgcagctgg   tcgtaccgag
33601 gagccggtgg   cggtggtggg   gatggcgtgt   cgtttccccg   gtggtgtcgc
33651 atcagcggat   cagttgtggg   acttggtgat   cgctggccgt   gatgtggtgg
33701 gtaattttcc   ggccgatcgg   ggttgggatg   tggagggact   gtttgatccc
33751 gatccggacg   cggtcggcaa   aacctacacc   cgttacggcg   cgttccctga
33801 cgatgcggca   ggttttgatg   ccgggttctt   tgggatctct   ccacgggagg
33851 cacgcgcgat   ggacccccag   cagcggctgc   tgctggagg   gtgctgggaa

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FIGURE 6(continued)

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33901 ggcctagaaa ccgcgggtat tcccgcgcac accttggccg gcacctccac
33951 cgggggtattc gccggagcct gggcccagtc ctacggcgcc accaactccg
34001 atgacgctga ggggtatgcg atgaccggcg gctcgactag cgtcatgtcc
34051 ggccgtatcg cctacacctt gggcctagaa ggtccagcga tcaccgttga
34101 caccgcctgc tcgtcatcgc tgggtggcaat tcacctggcc tgccaatcct
34151 tacgcaacaa cgaatcccag ctagcactgg ccggcggcgt caccgtgatg
34201 agcacacctg cgattttcac cgagttctcc cgccaacgcg gcctggcccc
34251 agatggacgc tgcaaagcct tcgccgctac cgccgatggc accggctttg
34301 gtgaaggcgc cgcggtcttg gtocctgaac ggctctccga ggcccgcgcg
34351 aacaaccacc cggtccttgc gatcgtcgct ggatcggcga tcaaccaaga
34401 cggcgcatcc aacggactga ccgcacccca cggcccgtca caacaacgcg
34451 tcatcaacca agcactagcc aacgcgggcc tcaccacga ccaggtcgac
34501 gccgtcgaag cccacggcac cggcaccaca ctgggtgacc ccacgaagc
34551 cagcgcccta cagccacct acggccacca ccacacgcc gatcaaccgc
34601 tttggctggg atccatcaaa tccaacatcg gccacacca agccgccgcg
34651 ggcgcccgcg gtgtggtcaa gatgatccaa gccatcacc acgccacctt
34701 gcccgccacc ttgcacgtcg accaaccag cccccacatc gactggtcca
34751 ggcgcacagt ccgactccta accgagccca tccaatggcc caacaccgac
34801 ccccccgca ccgcggcggt gtccctattc ggcatcagcg gcaccaacgc
34851 ccacctcatc ctccaacaac cccccacccc cgacaccaca caaaccccca
34901 acaccacaac aggttctgat ccgcagtggt gttctgatcc cgcagtgggt
34951 gtactggtgt ggccgttgtc agcgcgttca gcgccgggt taagcgaca
35001 agcgcccggt atgtaccag ctctacgcgc ccacccgat ctggatccga
35051 tcgatgtagc ccacagcctg gctaccacac gcagccacca cccccaccgc
35101 gccaccatca ccaccagcat tgagcaccac agcgaaaaca accacgacac
35151 aaccgatgcg ctggccgcac tgacgccct ggccaacaac ggcacacacc
35201 ccctgctgag cagaggcctg ctgacccac agggccccgg caaaacagtg
35251 ttctgttcc ccggacaggg cagtcaatac cccggcatgg gcgcagatct
35301 ctaccgcaa tcccccggtg tcgccacgc cctcgacgca tgcgacgcag
35351 cgttacagcc tttcactgga tggtcggtgc tagctgtgtt acacgacgaa
35401 cccgaggccc cgtcgttgga gcgggtcgat gtggtccagc ctgtgttgtt
35451 ctcggtgatg gtgtcgttag ccgcactctg gcggtgggccc ggaatcacc
35501 ccgatgcagt catcgccac tcccaggcg agatcgccgc ggcacatgtg
35551 gccggagccc tgaccttgc cgaagcagct gcggtagtgg ctttgcgcag
35601 ccgtgtcttg accgacctgg ccggtgccgg tgccatggct tcagtgtat
35651 cgcccgagga accactgacc cagctgctgg cacggtggga cggcaagatc
35701 actgtcgccg cagttaacgg ccccgctagc gctgtggtct ccggcgatac
35751 cacagcgatc accgaattgc tgattacctg cgaacacgaa aacatcgacg
35801 ctgcgctat cccggtggac taccctctc attcccccta tatggaacac
35851 atccgccatc agttcctoga cgagctaccc gagctgacac cgcggccatc
35901 aaccatccg atgtattcca ccgtcgacgg cgaacctcac gacaccgct
35951 acgacaccac cacaatgacc gcggactact ggtaccgcaa catccgtaac
36001 actgtccggt tccatgacac tgtcgctgcc ctgctcgggg cgggtgagca
36051 ggttttctc gaactttcac ctacccgggt gttgacacaa gcgatcaccg
36101 acaccgtcga acaagccggc ggcggcgggc cagcagtgcc agctctacgc
36151 aaggatcgcc ctgatgctgt ccggttcgct gcagcactcg gccagctgca
36201 ctgccatggc atcagcccat cctggaatgt tctttactgc caggcccgcg
36251 cccacacact gccacctac gctttccagc atcagcgtta ctggtgctg
36301 ccaccgctg gtgatttcag cggggccaat acccagcca tgcatccgt
36351 gctagacacc gccaccgaac tggccgaaaa ccgcggatgg gtgttcaccg
36401 gccggatcag cccacgcacc caaccatggc taaacgaaca cgcgctcgaa
36451 tcagccgtgc tgttcccagg caccggattt gtcgagctag cgctgcatgt
36501 cgctgaccgt gccggatatt cctcggtcaa cgaactgatc gtgcacacc
36551 ccctgctact cgctggccac gacaccgcgg atctacagat caccgtcacc
36601 gacaccgatg acatgggccc gcagtctctt aacatccact cgcaccaca
36651 tatcgcccat gacaacacca ccaccggcga tgaacaacc gagtgggtcc
36701 tgcattgccag cgcagtcctg accgcacaaa ccaccgacca caaccacctc

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FIGURE 6(continued)

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36751 cccctaacgc ctgtgccgtg gcctccaccc ggcacagccg cgatcgaggt
36801 ggatgacttc tacgacgacc tggctgcaca gggctacaac tacggcccga
36851 cattccaagg tgtgcaacgg atatggcgtg accacgccac acccgatgtc
36901 atcta.cgccg aagttgaact acccgaagac accgacatcg acggctacgg
36951 catccacccc gccctattcg acgccgcttt acacccccta ctgccctga
37001 cccaa.ccccc caccaacgac accgatgaca ccaacaccgc agacaccggg
37051 gacca.ggtgc ggtgcccta cgccctttacc ggcacagtt tgcacgccac
37101 ccacgccacc cgattacggg tacggctgac ccgtaccggc gccgatgcca
37151 tcaccgtgca caccagtgac accaccggag ccccggtggc gatcatcgac
37201 tcatt.gatca cccgccccct caccaccgcc acagggctctg ctccggcaac
37251 cacagcagct ggcctactac acctgagctg gccaccacac cctgacacca
37301 cgacc.gacac cgacaccgac accgatgccc tgcggtatca ggtgatcgcc
37351 gaacc.cactc aacaactgcc ccgtacctg cacgacctac acaccagcac
37401 caccgaagca gacgtggttg tgtggccggt accggtgccc agcaacgaag
37451 agctc.caggg acaccaagca tccgacaccg cgggtgtcttc tcggatacac
37501 accct.gaccc gccaaacact taccgtggtg caggactggc tcaactaccc
37551 cgaca.ccacc ggcacccgac tggctatcgt gaccgccac gccgtcagca
37601 ccagt.gccca cgaccgggtc ccgacctag cccacgccgc agtgtggggc
37651 ctgat.ccgca gcgccccaaa cgaacacccc ggacgcttca cactgctcga
37701 caccgacgac aacaccaaca gcgacaccct caccaccgcc ctaaccctgc
37751 caacc.cgcgc aaaccaactg gccatacgcc gcgacaccat ccacatcccc
37801 ccct.gaccc gcacagcag tgcgggtgcg ctactgcgc cgggtggtggt
37851 agatc.ctgag ggcacgggtg tgatcaccgg ggggaccggg acgctgggtg
37901 ccttg.ttcgc cgagcatctg gtttctgccc atggtgtccg gcatctgttg
37951 ttgac.ctcgc ggcgcggacc tcaggcccac ggtgccaccg atctgcagca
38001 gcggc.tcacc gatctaggtg ctcatgtcac catcacggcc tgcgatatca
38051 gcgac.cccga agcactggcc gccctggtca attcagtgcc cacacaacac
38101 cgttt.aaccg cggtagtgca caccgccgcg gtattggccg acaccocggt
38151 caccg.agttg accggcgatc aactcgacca ggtgctggcc cccaaaatcg
38201 acgcg.gcatg gcagctgcac caactcacct acgaacacaa cctgtctgca
38251 ttcac.catgt tctcgtccat ggccgggaatg ataggcagtc ccggtcaggg
38301 taact.acgcg gcagccaaca ccgcgttaga tgctctcgcc gactaccgcc
38351 accgc.ctggg cttgcccgcg accagcctgg cctggggcta ctggcagact
38401 cacac.cggtc tcaccgcgca tctaaccgat gtagatctag cccgcatgac
38451 ccgct.tgggt ttgatgcca tcgccaccag ccacggactg gccctgttcg
38501 atgcc.cccct cgccaccgga cagcccgttt cgataccgcg cccgatcaac
38551 accca.caccc tggcccgaac cgcccgcgac aacaccctgg ccccgatcct
38601 gtctg.cgtcg atcaccacac cacggcgccg ggcgccctct gccgcaaccg
38651 atctc.gtgc ccgcctcaac ggacttagcc cccaacagca acaacaaaca
38701 ctggc.caccc tegtggccgc ggccaccgcc accgtgctgg gccaccacac
38751 ccccg.aaagc atcagcccag ccaccgcgtt caaagacctc ggaatcgatt
38801 cgctg.accgc ccttgaactg cgcaacaccc tcaccacaa caccggcctg
38851 gatct.gcccc ccaccctcat ctctgatcac cccacacccc atgcggtggc
38901 cgagc.atctg cttgaacaga tccctggcat cggtgccctg gtgocggctc
38951 cgggt.ggtgat cgcagctggg cgtaccgagg agccgggtggc ggtggtgggg
39001 atggc.gtgct gtttccccgg tgggtgcgca tcagcggatc agttgtggga
39051 cttgg.tgacg gctggccgtg atgtggtggg taattttccg gccgatcggg
39101 gttgg.gatgt ggagggactg tttgatcccg atccggacgc ggtcggcaaa
39151 accta.caccc gttacggcgc gttccttgac gatgcggcag gttttgatgc
39201 cgggt.tcttt gggatctctc cacgggaggc acgcgcgatg gacccccagc
39251 agcgg.ctgct gctggagggt tgcgtgggaag cgctagaaac cgcgggtatt
39301 ccgcg.cacac ccttggccgg caccctccac ggggtattcg ccggagcctg
39351 ggccc.agtcc tacggcgcca ccaactccga tgacgctgag gggtatgcga
39401 tgacc.ggcgg ctcgactagc gtcattgtcc gccgtatcgc ctacaccttg
39451 ggcct.agaag gtccagcgat caccgttgac accgcctgct cgtcatcgct
39501 ggtgg.caatt caccctggcct gccaatcctt acgcaacaaac gaatcccagc
39551 tagca.ctggc cggcggcgtc accgtgatga gcacacctgc ggttttcacc

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FIGURE 6(continued)

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39601 gagttctccc gccaacgcgg cctggcccca gatggacgct gcaaagcctt
39651 cgccgctacc gccgatggca ccggctttgg tgaaggcgcc gcggctcttg
39701 tccttgaacg gctctccgag gcccgccgca acaaccaccc ggctccttgcg
39751 atcgctcgctg gatcggcgat caaccaagac ggcgcaccca acggactgac
39801 cgcacccccc ggcccgtcac aacaacgcgt catcaacca gcactagcca
39851 acgcccggcct caccacgac caggtcgacg ccgtcgaagc ccacggcacc
39901 ggcaccacac tgggtgaccc catcgaagcc agcgccctac acgccaccta
39951 cggccacccac cacacgcccg atcaaccgct ttggctggga tccatcaaat
40001 ccaacatcgg ccacacccaa gccgcgcgcg gcgcgcgcgg tgtggtcaag
40051 atgatccaag ccatacccca cgccaccttg ccgcgcacct tgcacgtcga
40101 ccaacccagc ccccatcctg actggtccag cggcacagtc cgactcctaa
40151 ccgagcccat ccaatggccc aacaccgacc acccccgcac cgcggcggtg
40201 tccctcattcg gcatcagcgg caccaacgcc cacctcatcc tccaacaacc
40251 ccccaccccc gacaccacac aaaccccca caccacaaca ggttctgata
40301 ccgcagtggtg ttctgatccc gcagtgggtg tactggtgtg gccgttgtca
40351 gcgcggttcag cgccggggtt aagcgcacaa gcggcccgtc tgtaccagca
40401 tctcagcgcc caccctgatc tggatccgat cgatgtagcc cacagcctgg
40451 ctaccacacg cagccaccac ccccacgcg ccaccatcac caccagcatt
40501 gagcaccaca gcgaaaacaa ccacgacaca accgatgcgc tggccgcact
40551 gcacgcccctg gccaaacaacg gcacacaccc cctgctgagc agaggcctgc
40601 tgaccccaca gggccccggc aaaacagtgt tcgtgttccc cggacagggc
40651 agtcaatacc ccggcatggg cgcagatctc taccgccaat tcccgtgtt
40701 cgcccacgccc ctcgacgcac gcgacgcagc gttacagcct ttactggat
40751 ggtcggtgct agctgtgtta acgacgaac ccgaggcccc gtcgttgagg
40801 cgggtcgtatg tgggtccagc tgtgttgttc tcggtgatgg tgcgttagc
40851 cgcactctgg cgggtgggccc gaataccccc cgatgcagtc atcgccact
40901 cccagggcga gatcgccgcg gcacatgtgg ccggagccct gacctgccc
40951 gaagcagctg cggtagtgge tttgcgcagc cgtgtcttga ccgacctggc
41001 cgggtgccggt gccatggctt cagtgtctat gcccgaggaa ccactgaccc
41051 agctgctggc acggtgggac ggcaagatca ctgtcgccgc agttaacggc
41101 cccgctagcg ctgtggtctc cggcgatacc acagcgatca ccgaattgct
41151 gattacctgc gaacacgaaa acatcgacgc tcgcgctatc ccggtggact
41201 acccctctca ttccccctat atggaacaca tccgccatca gttcctcgac
41251 gagctacccg agctgacacc gcggccatca accatcgcca tgtattccac
41301 cgtcgacggc gaacctcagc acaccgccta cgacaccacc acaatgaccg
41351 cggactactg gtaccgcaac atccgtaaca ctgtccgggt ccatgacact
41401 gtcgctgccc tgctcggggc gggtagcagc gttttcctgg aactttcacc
41451 tcacccgggtg ttgacacaag cgatcaccca caccgtcgaa caagccggcg
41501 gcggcgccgc agcagtcca gctctacgca aggatcgccc tgatgctgtc
41551 gcgttcgctg cagcactcgg ccagctgcac tgccatggca tcagcccatc
41601 ctggaatggt ctttactgcc aggcccgccc cctcacactg cccacctacg
41651 ctttccagca tcagcgttac tggctgctgc ccaccgctgg tgatttcagc
41701 ggggccaata cccacgccat gcatccgctg ctagacaccg ccaccgaact
41751 ggccgaaaac cgcggatggg tggtcaccgg ccggatcagc ccacgcaccc
41801 aaccatggtt aaacgaacac gccgtcgaat cagccgtgct gttcccagge
41851 accggatttg tcgagctagc gctgcatgtc gctgaccgtg ccggatatcc
41901 ctcggtcaac gaaatgatcg tgacaccccc cctgctgctc gctggccacg
41951 acaccgcgga tctacagatc accgtcaccg acaccgatga catgggcccg
42001 cagtctctta acatccactc cgcgccacat atcgcccatg acaacaccac
42051 caccggcgat gaacaacccg agtgggtcct gcatgccagc gcagtcctga
42101 ccgcacaaac caccgaccac aaccacctcc ccctaacgcc tgtgccgtgg
42151 cctccacccg gcacagccgc gatcgaggtg gatgacttct acgacgacct
42201 ggctgcacag ggctacaact acggcccgcac attccaaggt gtgcaacgga
42251 tatggcgtag ccacgccaca cccgatgtca tctacgccga agttgaacta
42301 cccgaagaca ccgacatcga cggctacggc atccaccccc ccctattcga
42351 cgccgcttta caccacctac tcgccctgac ccaaccccc accaacgaca
42401 ccgatgacac caacaccgca gacaccgggtg accaggtgcg gctgccctac

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FIGURE 6(continued)

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42451 gcctttaccg gcatacagttt gcacgccacc cacgccaccc gattacgggt
42501 acggctgacc cgtaccggcg ccgatgccat caccgtgcac accagtgaca
42551 ccaccggagc cccggtggcg atcatcgact cattgatcac ccgccccctc
42601 accaccgcca cagggtctgc tccggcaacc acagcagctg gcctactaca
42651 cctgagctgg ccaccacacc ctgacaccac gaccgacacc gacaccgaca
42701 ccgatgccct gcggtatcag gtgatcgccg aaccactca acaactgccc
42751 cgctacctgc acgacctaca caccagcacc gacctgcaca ccagcaccac
42801 cgaagcagac gtggttgtgt ggccgggtacc ggtgcccagc aacgaagagc
42851 tccaggcaca ccaagcatcc gacaccgcgg tgtcttctcg gatacacacc
42901 ctgaccgcgc aaacacttac cgtggtgcag gactggctca ctacccccga
42951 caccaccggc acccgactgg tcatcgtagc ccgccacggc gtcagcacca
43001 gtgcccacga cccggtcccc gacctagccc acgccgcagt gtggggcctg
43051 atccgcagcg cccaaaacga acaccccggc cgcttcacac tgetcgacac
43101 cgacgacaac accaacagcg acacctcac caccgcccta accctgcaa
43151 cccgcgaaaa ccaactggcc atacgcccgc acaccatcca catccccgc
43201 ctgaccgcga ccgctgtcct gacaccaccg gacagcggcc cctgggcct
43251 tgacaccacc ggcaaggggt atctggccaa cctcgccctg ctaccgaccg
43301 cccacactgc cctggcctct ggacaaatcc gtatcgatgt ccgggccgct
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43451 tctacggatt cgccgtgggt gatgccgtga ccggcatgac cgtctctggt
43501 gcgtttgccc ccagcactgt cgtgatcac cgcatggtga tgacgatccc
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43601 ccgctacatc cgctttggcc gagatctcgg gcctaagccg agggcaacga
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43751 ggagcaccct tgaggcactg ggggtaccgc gcgaccatat cgcttctctg
43801 cgtactctgg acttttccaa cgcattcctc gatgccacca acggcgccgg
43851 tgttgatgtc gtattgaact gcctcagtgg tgaattcgtc gaagcatccc
43901 tagccctgct gccccgcggg ggccatttcg tcgaaatcgg caaaaccgac
43951 atccgtgata ccgaggtcat cgccgcaacc catcccgcg tcatttaccg
44001 cgccctcgat ctgctcagcg tctccccga tcacatccag cgcacactgg
44051 cccaactgtc cccactgttt gccaccgaca ccctaaaacc cctaccgacc
44101 actaattaca gcatctacca agccatctcg gccttacgtg acatgagtca
44151 agcccgtcac acaggcaaga tcgtgctcac tgcgcgggtg gtggtagatc
44201 ctgagggcac ggtgttgatc accgggggga ccgggacgct ggggtgcctt
44251 ttcgcgcagc atctggtttc tgcccatggg gtccggcatc tgttggtgac
44301 ctgcgcggcg ggacctcagg ccacgggtgc caccgatctg cagcagcggc
44351 tcaccgatct aggtgctcat gtcaccatca cggcctgcga tatcagcgac
44401 cccgaagcac tggccgcccct ggtcaattca gtgcccacac aacaccgttt
44451 aaccgcggta gtgcacaccg ccgcggtatt ggccgacacc ccggtcaccg
44501 agttgaccgg cgatcaactc gaccaggtgc tggcccccac aatcgacgcg
44551 gcatggcagc tgcaccaact cacctacgaa cacaacctgt ctgcattcat
44601 catgttctcg tccatggccg gaatgatagg cagtcccggg cagggttaact
44651 acgcgcgacg caacaccgcg ttagatgctc tcgcgcgacta ccgccaccgc
44701 ctgggcttgc ccgcgaccag cctggcctgg ggctactggc agaccgcgac
44751 cgggtgtcacc gcgcattctaa ccgatgtaga tctagccgcg atgaccgcgc
44801 tgggtttgat gcccatcgcc accagccacg gactggccct gttcgatgcc
44851 gccctcgcca ccggacagcc cgtttcgata cccgccccga tcaacacca
44901 caccctggcc cgacacgccc cgacaacac cctgaccccg atcctgtctg
44951 cgctgatcac cacaccacgg cgccgggccc cctctgcgcg aaccgatctc
45001 gctgcccgcc tcaacggact tagcccccac cagcaacaac aaacactggc
45051 caccctcgtg gccgcggcca ccgccaccgt gctgggcccac cacacccccg
45101 aaagcatcag ccagccacc gcgttcaaag acctcggaat cgattcgctg
45151 accgcccttg aactgcgcaa caccctcacc cacaacaccg gcctggatct
45201 gccccccacc ctcatcttcg atcacccac acccaccgcg ctaacccaac
45251 acctgcacac ccgactcacc accggtgccc tgggtgcggc tccggtggtg

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FIGURE 6(continued)

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45301 atcgacagctg gtcgtaccga ggagccggtg gcggtggtgg ggatggcgtg
45351 tcgtttcccc ggtggtgtcg catcagcgga tcagttgtgg gacttggtga
45401 tcgctggccg tgatgtggtg ggtaattttc cggccgatcg gggttgggat
45451 gtggcgggac tgtttgatcc cgatccggac gcggtcggca aaacctacac
45501 ccgttacggc gcgttccttg acgatgcggc aggttttgat gccgggttct
45551 ttgggatctc tccacgggag gcacgcgcga tggaccccc gcagcggctg
45601 ctgctggagg tgtgctggga agcgctagaa accgcgggta ttccgcgcga
45651 caccttggcc ggcacctcca ccggggtatt cgtcggagcc ggggccaggt
45701 cctacggcgc caccaactcc gatgacgctg aggggtatgc gatgaccggc
45751 ggcgcgatca gcgtcatgtc cggccgtatc gcctaacctc tgggcctaga
45801 aggtccagcg atcaccgttg acaccgcctg ctcgatcatcg ctggtggcaa
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45901 gccggcggcg tcaccgtgat gagcacacct gcggttttca ccgatttctc
45951 ccgccaacgc ggccctggccc cagatggacg ctgcaaagcc ttgcgcgcta
46001 ccgccgatgg caccgccttt ggtgaaggcg ccgcggtctt ggtccttgaa
46051 cggctctccg agggccgcgg caacaaccac ccggtccttg cgatcgtcgc
46101 tggatcggcg atcaaccaag acggcgcac ccaacggactg accgcacccc
46151 acggcccgtc acaacaacgc gtcacaaacc aagcactagc caacgcgggc
46201 ctacccacg accaggtcga cgccgtcgaa gccacggca ccggcaccac
46251 actgggtgac cccatcgaag ccggcgccct acacgccacc tacggccacc
46301 accacacgcc cgatcaaccg ctttggtgg gatccatcaa atccaacatc
46351 ggccacaccc aagccgcgcg cggcgccgcg ggtgtggtca agatgatcca
46401 agccatcacc cagccacact tgcccgcac cttgcacgtc gaccaacca
46451 gcccccacat cgactggtcc agcggcacag tccgactcct aaccgagccc
46501 atccaatggc ccaacaccga ccccccgc accgcggcgg tgtcctcatt
46551 cggcatcagc ggcaccaacg cccacctcat cctccaacaa cccccaccc
46601 ccgacaccac acaaaccccc aaccaccaca caggttctga tcccgcagtg
46651 ggttctgatt ccgcagtggt ttctgatccc gcagtgggtg tactggtgtg
46701 gccgttgtca gcgcgttcag cgcgggggtt aagcgcacaa gcggcccgtc
46751 tgtaccagca tctcagcgcc caccocgatc tggatccgat cgatgtagcc
46801 cacagcctgg ctaccacacg cagccaccac ccccaccgcg ccaccatcac
46851 caccagcatt gagcaccaca gcgaaaacaa ccacgacaca accgatgcgc
46901 tggcgcgact gcacgcctg gccaaacacg gcacacaccc cctgctgagc
46951 agaggcctgc tgacccaca gggccccggc aaaacagtgt tcgtgttccc
47001 cggacagggc agtcaatacc ccggcatggg cgcagatctc taccgccaat
47051 tccccgtgtt cgccacgcc ctgcagcagg tcgctgcggc gctgaaccgc
47101 catctcgatg ttgcgttgct tgaggatgat ttcagccaac aagacactgc
47151 catggcgcaa ctgctggacc agaccttcta tgcacaaccg gcgttggtcg
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47351 gactgatgca atcctgcacg cccggcggga cgatgctcgc actacaagcc
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47451 catcgccgcg atcaacggag caacgtcgat cgtactgtca ggagatcacg
47501 acagcctcga acaaatcggc gagcacttca ttaccaaga tcgacgtacc
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47601 cctcgaacaa ttccgcgaga tcgcggccca actcaccttc agcgcaccca
47651 ccctgcccac cttgtccaac ctaccggggc agatcgcccg ccacgacca
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47751 ccatgacact gtcgctgcc tgctcggggc gggtagacag gttttcctgg
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47851 caagccggcg gcggcgggcg agcagtgccg gctctacgca aggatcgccc
47901 tgatgctgtc gcgttcgctg cagcactcgg ccagctgcac tgccatggca
47951 tcagcccatc ctggaatgtt ctttactgcc aggccgcgcc cctcacactg
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48051 tgatttcagc ggggccaaata cccacgccat gcacccgctg ctagacaccg
48101 ccaccgaact ggccgaaaac cgcggatggg tgttcaccgg ccggatcagc

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FIGURE 6(continued)

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48151 ccacgcacccc aaccatgggt aaacgaacac gccgtcgaat cagccgtgct
48201 gttcccgaac accggatttg tcgagctagc gctgcatgtc gctgaccgtg
48251 ccggatattc ctccggtcaac gaactgatcg tgcacacccc cctgctgctc
48301 gctgggccacg acaccgcgga tctacagatc accgtcacccg acaccgatga
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48401 acaacaccac caccggcgat gaacaacccg agtgggtcct gcatgccagc
48451 gcagtcctga ccgcacaaac caccgaccac aaccacctcc ccctaacgcc
48501 tgtgccgtgg cctccacccc gcacagccgc gatcgagggt gatgacttct
48551 acgacgacct ggctgcacag ggctacaaat acggcccgcac attccaaggt
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48651 agttgaacta cccgaagaca ccgacatcga cggctacggc atccaccccg
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48751 accaacgaca ccgatgacac caacaccgca gacaccgggg accaggtgcg
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48851 gattgcgggt acggctgacc cgtaccggcg ccgatgccat caccgtgcac
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49151 tgcacaccag caccaccgaa gcagacgtgg ttgtgtggcc ggtaccgggtg
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49301 ggctcactca ccccgacacc accggcaccg gactggtcat cgtgaccgcg
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49451 tcacactgct cgacaccgac gacaacacca acagcgacac cctcaccacc
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49551 catccacatc ccccgccctga ccgcacacag cagtgcagggt gcgctcactg
49601 cgccgggtgg ggtagatcct gagggcacgg ttgtgatcac cgggggggacc
49651 gggacgctgg gtgccttggt cgccgagcat ctggtttctg cccatggtgt
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49751 ccgatctgca gcagcggctc accgatctag gtgctcatgt caccatcacg
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49851 gccacacaa caccgtttta ccgcggtagt gcacaccgcc gcggtattgg
49901 ccgacacccc ggtcacccgag ttgaccggcg atcaactcga ccagggtgctg
49951 gcccccaaaa tcgacgcggc atggcagctg caccaactca cctaogaaac
50001 caacctgtct gcattcatca tgttctcgtc catggccgga atgataggca
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50251 ctggccctgt tcgatgcgc cctcgccacc ggacagcccg tttcgatacc
50301 cgccccgatc aacaccacaa cctggcccgc acacgcccgc gacaacaccc
50351 tgcccccgat cctgtctgcg ctgatcacca caccacggcg ccgggcgggc
50401 tctgccgcaa ccgatctcgc tgcccgctc aacggactta gcccccaaca
50451 gcaacaacaa acactggcca ccctcgtggc cgcggccacc gccaccgtgc
50501 tgggcccaca cacccccga agcatcagcc cagccaccgc gttcaaagac
50551 ctcggaatcg attcgctgac cgcccttgaa ctgcgcaaca ccctcaccca
50601 caacaccggc ctggatctgc ccccaacct catcttcgat caccacacac
50651 ccaccgcgct aacccaacac ctgcacaccc gactcacaca aattgagagc
50701 ccaaattccg aagactcgat gctgaacctt aaaaatttgg accgaattga
50751 atcatatatc ttcagaaatt cgggagaaga tcgagctcac gtaatcgcta
50801 atcgtttacg gtcaattctc tcgaaatggg atggcaccgc tagtccagaa
50851 ttacctgcgg aactccatct tgaatcgga acagacgatg agctgttttc
50901 cctagcaaac atgttttcga ctccaaccag cgaaatttca cctactctag
50951 aaggcgggccg tgggtgcaac tga

```

FIGURE 6(continued)

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MlsA2 gene

```

1      gtggtgtcaa ctgaagaaaa cctacgcgtt tacttaaaac aggtcatcac
51     agacctccac caaatgcagg cacgtctgcg gaagatcgaa aagcagagat
101    cagagcgggt ggcggtggtg gggatggcgt gtcgtttccc cgggtggtgtc
151    gcatcagcgg atcagttgtg ggacttggtg atcgctggcc gtgatgtggt
201    gggtaatttt ccggccgcatc ggggttggga tgtggaggga ctggttgatc
251    ccgatccgga cgcggtcggc aaaacctaca cccgttacgg cgcgttcctt
301    gacgatgcgg caggttttga tgccgggttc tttgggatct ctccacggga
351    ggcacgcgcg atggaccccc agcagcggct gctgctggag gtgtgctggg
401    aagcgctaga aaccgcgggt attcccgcgc acaccttggc cggcacctcc
451    accggggtat tcgtcggagc ctgggcccag tcctacggcg ccaccaactc
501    cgatggcgct gaggggtatg cgatgaccgg cggctcgact agcgtcatgt
551    ccggccgcat ccgctacacc ttgggcctag aaggctccagc gatcacctgt
601    gacaccgcct gctcgtcatc gctggtggca attcacctgg cctgccaatc
651    cttacgcaac aacgaatccc agctagcact ggccggcggc gtacacgtga
701    tgagcacacc tgcggttttc accgagttct cccgccaacg cggcctggcc
751    ccagatggag gctgcaaagc cttcgccgct accgccgatg gcaccggctg
801    cgggtgaagg gccgcggtct tggctcctga acggctctcc gaggcccgcc
851    gcaacaacca cccggtcctt gcgacgtcgc ctggatcggc gatcaaccaa
901    gacggcgcat ccaaaggact gaccgcaccc cagggccgt cacaacaacg
951    cgtcatcaac caagcactag ccaacgcggc cctcaccac gaccaggtcg
1001   acgccgtcga agccacggc accggcacca cactgggtga ccccatcgaa
1051   gccagcgccc tacacgccac ctacggccac caccacacgc ccgatcaacc
1101   gctttggctg ggatccatca aatccaacat cggccacacc caagccgccc
1151   ccggcgccgc cgggtgtggtc aagatgatcc aagccatcac ccacgccacc
1201   ttgcccgcga ccttgacgt gcaccaacc agccccaca tcgactggtc
1251   cagcggcaca gtcgcactcc taaccgagcc catccaatgg cccaacaccg
1301   accacccccg caccgcggcg gtgtcctcat tcggcatcag cggcaccaac
1351   gccacacctc tcctccaaca accccccacc cccgacacca caaaaacccc
1401   caacaccaca acaggttctg atcccgagc gggttctgat tccgcagtgg
1451   gttctgatcc cgcagtgggt gtactggtgt ggccgttgtc agcgcgttca
1501   gcgcgggggt taagcgcaca agcggcccggt ctgtaccagc atctcagcgc
1551   ccaccccgat ctggatccga tcgatgtagc ccacagcctg gctaccacac
1601   gcagccacca ccccaccgc gccaccatca ccaccagcat tgagcaccac
1651   agcgaaaaaa accacgacac aaccgatgcg ctggccgcac tgcacgccct
1701   ggccaacaac ggacacacac ccctgctgag cagaggcctg ctgacccac
1751   agggccccgg caaaacagtg ttctgtgttc ccggacaggg cagtcaatac
1801   cccggcatgg gcgcagatct ctaccgcaa ttccccgtgt tcgcccacgc
1851   cctcgacgag gtcgctgcgg cgtgaaccc gcatctcgat gttgcgttgc
1901   ttgaggtgat gttcagccaa caagacactg ccatggcgca actgctggac
1951   cagaccttct atgcacaacc ggcgttgttc gcgctgggaa ccgctctaca
2001   tcgattgttc acccagcgcg gtatccaccc ggactacctg ctaggccact
2051   ccacgggaga actcaccgcg gcatacgccg ccggtgtgct gtcactgcaa
2101   gacgcagcca ccttggtcac aagccgagga cgactgatgc aatcctgcac
2151   gcccggcggg acgatgctcg cactacaagc cagcgaagca gaagtacaac
2201   cgtgcttga aggcctagac cacgcggtgt ccatcgccgc gatcaacgga
2251   gcaacgtcga tcgtactgtc aggagatcac gacagcctcg aacaaatcgg
2301   cgagcacttc attacccaag atcgacgtac cacccgactg caggtcagtc
2351   acgctttcca ctctccacat atggacccca tcctcgaaca attccgccag
2401   atcgcgggccc aactcacctt cagcgcaccc accctgccc aattgtccaa
2451   cctcaccggg cagatcgccc gccacgacca actcgctca cctgactatt
2501   ggacccaagg gctacgtaac actgtccggt tccatgacac tgcgctgcc
2551   ctgctcgggg cgggtgagca ggttttctgt gaactttcac ctaccccggt
2601   gttgacacaa gcgatcaccg acaccgtcga acaagccggc ggcggcggcg
2651   cagcagtgcc agctctacgc aaggatcgcc ctgatgctgt cgcgttcgct

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FIGURE 7

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2701 gcagcactcg gccagctgca ctgccatggc atcagcccat cctggaatgt
 2751 tctttactgc caggcccgcc ccctcacact gccacactac gctttccagc
 2801 atcagcgtaa ctggctgctg cccaccgctg gtgatttcag cggggccaat
 2851 acccagccca tgcattccgt gctagacacc gccaccgaac tggccgaaaa
 2901 ccgcggtatg gtgttcaccg gccggatcag cccacgcacc caaccatggc
 2951 taaacgaaca cgccgtcgaa tcagccgtgc tgttcccagg caccggattt
 3001 gtcgagctag cgctgcatgt cgctgaccgt gccggatatt cctcgggtcaa
 3051 cgaactgata gtgcacaccc ccctgctact cgctggccac gacaccgcgg
 3101 atctacagat caccgtcacc gacaccgatg acatgggccc gcagtctctt
 3151 aacatccact cgcacccaca tatcggccat gacaacacca ccaccggcga
 3201 tgaacaaccc gagtggtgct tgcattgccag cgcagtcctg accgcacaaa
 3251 ccaccgacca caaccacctc cccctaaccg ctgtgcccgt gcctccaccc
 3301 ggcacagccg cgatcgaggt ggatgacttc tacgacgacc tggctgcaca
 3351 gggctacaac tacggcccga cattccaagg tgtgcaacgg atatggcgtg
 3401 accacgccac acccgatgtc atctacgccg aagttgaact acccgaagac
 3451 accgacatcg acggctacgg catccacccc gccctattcg acgcccgttt
 3501 acacccccta ctgcacctga cccaaccccc caccaacgac accgatgaca
 3551 ccaacaccgc agacaccggt gaccaggtgc ggctgcccta cgcttttacc
 3601 ggcattcagt tgcacgccac ccacgccacc cgattgcggg tacggctgac
 3651 ccgtaccggc gccgatgcca tcaccgtgca caccagtgc accaccggag
 3701 ccccggtggc gatcatcgac tcattgatca cccgccccct caccaccgcc
 3751 acagggctct ctccggcaac cacagcagct ggccctactac acctgagctg
 3801 gccaccacac cctgacacca cgaccgacac cgacaccgac accgatgcc
 3851 tgcgggtata ggtgatcgcc gaacccactc aacaactgcc ccgctacctg
 3901 cagcacctac acaccagcac cgacctgcac accagcacca ccgaagcaga
 3951 cgtgggtgtg tggccggtag cgggtgcccag caacgaagag ctccaggcac
 4001 accaagcatc cgacaccgcg gtgtcttctc ggatacacac cctgaccgcg
 4051 caaacactta ccgtgggtga ggactggctc actcaccctg acaccaccgg
 4101 caccgcactg gtcattcgta ccggccacgg cgtcagcacc agtgcccacg
 4151 acccggtccc cgacctagcc caogccgcag tgtggggcct gatccgcagc
 4201 gcccaaaacg aacaccccgg acgcttcaca ctgctcgaca ccgacgacaa
 4251 caccaacagc gacaccctca ccaccgccc aaccctgcca acccgcgaaa
 4301 accaactggc catacgccgc gacaccatcc acatcccccg cctgaccgcg
 4351 accgctgtcc tgacaccacc ggacagcgcc ccctggcgcc ttgacaccac
 4401 cggcaagggg gatctggcca acctcgccct gctaccgacc gccacactg
 4451 ccctggcctc tggacaaatc cgtatcgatg tccgggcccg tggtttgaat
 4501 ttacacgacg tggctcgctc gttggggcta atccccgacg acggattcgg
 4551 cggagaagcc gccggggtga tcagcgagat cggctccgac gtctacggat
 4601 tcgccgtggg tgatgccgtg accggcatga ccgtctctgg tgcgtttgcc
 4651 cccagcactg tcgctgatca ccgcatggtg atgacgatec cggcccgggtg
 4701 gtccttcccc caagccgcat ccataccggt ggtattcctg accgcctaca
 4751 tcgctttggc cgagatctcg ggcctaagcc gagggcaacg agtgctgac
 4801 catgccggca ctggcggtgt ggggtatggc gcgattcaat tggcacacca
 4851 tttgggtgcc gaagtattcg ccaccgccag cgccgcgaaa tggagcacc
 4901 ttgaggcact gggggtaccg cgcgaccata tcgcttctc gcgtactctg
 4951 gacttttcca acgcatctct cgatgccacc aacggcgccg gtgttgatgt
 5001 cgtattgaac tgccctcagt gtgaattcgt cgaagcatcc ctagccctgc
 5051 tgccccgcgg tggccatttc gtcgaaatcg gcaaaaccga catccgtgat
 5101 accgaggtca tcgcccgaac ccattcccgg gtcatttacc gcgcccctga
 5151 tctgtctcag gtctcccccg atcacatcca gcgcacactg gcccactgt
 5201 cccactgtt tcgccaccgac accctaaaac ccctaccgac cactaattac
 5251 agcatctacc aagccatctc ggcccttacgt gacatgagtc aagcccgtca
 5301 cacaggcaag atcgtgctca ctgcgccggt ggtggtagat cctgagggca
 5351 cgggtgtgat caccgggggg accgggacgc tgggtgcctt gttcgccgag
 5401 catctggttt ctgcccattg tgtccggcat ctgttggtga cctcgccggc
 5451 cggacctcag gccacgggtg ccaccgatct gcagcagcgg ctcaccgatc
 5501 taggtgctca tgtcaccatc acggcctgcg atatcagcga cccgaagca

FIGURE 7(continued)

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5551 ctggccgccc tgggtcaattc agtgcccaca caacaccgtt taaccgcggt
5601 agtgcacacc gccgcggtat tggccgacac cccggtcacc gagttgaccg
5651 gcgatcaact cgaccagggtg ctggccccc aatcgacgc ggcattggcag
5701 ctgcaccaac tcacctacga acacaacctg tctgcattca tcatgttctc
5751 gtccatggcc ggaatgatag gcagtcccgg tcagggtaac tacgcggcag
5801 ccaacaccgc gtttagatgct ctgcgcgact accgcacccg cctgggcttg
5851 cccgcgacca gcctggcctg gggctactgg cagaccgcga ccggtgtcac
5901 cgcgcatcta accgatgtag atctagcccg catgaccgcg ctgggtttga
5951 tgcccatcgc caccagccac ggactggccc tggtcgatgc cgccctcgcc
6001 accggacagc ccgtttcgat acccgccccg atcaacaccc acaccctggc
6051 ccgacacgcc cgcgacaaca ccctgacccc gatcctgtct gcgctgatca
6101 ccacaccacg ggcgcgggcg gcctctgccg caaccgatct cgctgccgcg
6151 ctcaacggac ttagccccc aacagcaaaa caaacactgg ccaccctcgt
6201 ggccgcggcc accgccaccg tgctgggcca ccacacccc gaaagcatca
6251 gcccagccac cgcgttcaaa gacctcgga tcgattcgct gaccgccctt
6301 gaactgcgca acaccctcac ccacaacacc ggcttgatc tgcccccac
6351 cctcatcttc gatcacccca caccatgc gctaaccaca cacctgcaca
6401 cccgactcac ccaaagccat accccggctc gaccaattgc gtccctgcta
6451 agccacgcga tcgatgaggg caaattccgt gccggcgctg acctattgat
6501 ggccgcatcc aatttgaacc aaagtctcag caatatggct gaactcaacc
6551 agctcccggc cgtgacggac atagctgacg cgtctcctga tgggctactc
6601 accctgatct gcattctctac ctgagagaat gactacgctc gcctcgctgc
6651 tgcgaacatt cattcactga ccttcgctga aattgcggcg cccggctttt
6701 acgacgcgca gctgccaaat tcgatagaga cgtcggcaga ggcgctggca
6751 actgccatca caggcgccca cgcaaatacg tccattgttc tggtagcgca
6801 ctccattgtc tgcgagctag ctgaggcaac gatgacacgt ctacaagacg
6851 ctgacatcga tcttgtgggt ctggttctgt tggatccact cgaagggact
6901 aacagcactg aagattatgt ggagacagtc ttgactcgaa tcgagcatat
6951 caatgcaccg aggtcggag tagacgggta ccttgccgcc ctgggcccgt
7001 atctccaatt ccacgaagac cgccgaatac caataccgga aacgcggcac
7051 atgacactgc actcggacac gaaaattgac cgtgcccaca caccaatgaa
7101 cttattacaa gatgaggcag cgttgaccgc cctcaaaata ggaaactgga
7151 tgaacgacac agggagtatc gcagtaacac tgagagatgg acccgatttc
7201 ttgggcaggg cccgctctgt caacatgagg tga

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FIGURE 7(continued)

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MlsB gene

```

1   gtgatcttcg gagatgctca caaaaactgc aggggaggtc ggggtgttggg
51  tgatgcagtc gcagtggctc gaatgtcttg ccgggttcct ggcgcacatcg
101 atccggacgc tctgtgggcg ctgctgcgag acgggatcag tgtgggtcgat
151 gagatacctt ctgcacgttg gaatttagac ggctctgttg ctcaccgact
201 gaccgatgag caacgatcag cgcttcggca tggcgccctt cttgatgacg
251 tcgaagggtt tgacgccgcg ttcttcggaa ttaacccttc cgaagctggg
301 tcgatggatc cgcagcaacg attgatgctt gaactgacct gggcagcact
351 cgaagatgct cgaatcgtgc cagaacatct ttccggtagc agtagcgggg
401 tgtttaccgg cgccatgagc gatgattaca cgaccgcggt gacctaccgc
451 gcagcgatga ctgcacatac ctttgcgggg actcaccgca gcctcatagc
501 caaccgtgtc tcctacacac tcggtctacg cggacctagt ttggtcatcg
551 ataccgggca atcgtcctca ctggtggctg tgacgtggc aatggaaagc
601 ttgcgcagag aagaaacttc acttgctatc gcgggtggtt ttcaccttaa
651 cctcagcctc gccgcgcac tgagcgagc acactttgga gccctttcac
701 ctgacggacg ctgctacacc ttcgacgcac gtgccaacgg atacgttcgt
751 ggcgaaggcg gcggcgtcgt cgtcctcaaa cgtctcaacg acgccctagc
801 cgacggcaac cataattact gtgtgatccg cggcagctca gtcaacaacg
851 acggcgccac tcaagacttg acagcgcccg gagtgcagcg ccagcgtcaa
901 gcgctccttc aagcttatga gcgagccgaa atcgaccctt cagaagtcca
951 atacgtcgag ctacatggca ccggcaccog actcggcgat cccaccgaag
1001 cccactcgct tcaactcgtc ttccggcacat ccacggtccc gcgcagcccg
1051 ctgctagtcg ggtcaatcaa aaccaatata ggtaacctcg aaggcgccgc
1101 aggaatacct gccctaatac agactgcctt tgccgttcac catcgccagc
1151 ttccccccag cctcaactac acggttccta acccaaaaat cccgctagag
1201 cagctagggc tccgcgtcca aaccactctc agtgaatggc cggacttaga
1251 caaacgccta acggcgggcg tgtcatcttt ttccatgggt ggcaccaacg
1301 cccacctcat cctccaacaa cccccaccc ccgacaccac acaaaccccc
1351 accccacaa caggtttctga tcccgcagtg ggttctgatc ccgcagtggg
1401 tgtactgggtg tggccggttg cagcgcggtt agcgccgggg ttaagcgcac
1451 aagcgcccg tctgtaccag catctcagcg cccaccccga tctggatccg
1501 atcgatgtag cccacagcct ggctaccaca cgcagccacc acccccaccg
1551 cgccaccatc accaccagca ttgagcacca cagcgaaaac aaccacgaca
1601 caaccgatgc gctggccgca ctgcacgccc tggccaacaa cggcacacac
1651 cccctgctga gcagaggcct gctgacccca cagggccccc gcaaaacagt
1701 gttcgtgttc cccggacagg gcagtcaata ccccggcagtg ggcgcagatc
1751 tctaccgcca attccccgtg ttcccccacg ccctcgacga ggtcgtgog
1801 gcgctgaacc cgcatctcga tgttgcggtg cttgaggtga tgttcagcca
1851 acaagacact gccatggcgc aactgctgga ccagaccttc tatgcacaac
1901 cggcggtgtt cgcgctggga accgctctac atcgattgtt caccacgcgc
1951 ggtatccacc cggactacct gctaggccac tccatcgag aactcaccgc
2001 ggcatacgcc gccggtgtgc tgtcactgca agacgcagcc accttgggtca
2051 caagccgagg acgactgatg caatcctgca cgcccgcgcg gacgatgtct
2101 gcactacaag ccagcgaagc agaagtacaa ccgctgcttg aaggcctaga
2151 ccacgccgtg tccatcgccg cgatcaacgg agcaacgtcg atcgactgt
2201 caggagatca cgacagcctc gaacaaatcg gcgagcactt cattacccaa
2251 gatcgacgta ccacccgact gcaggtcagt cacgctttcc actctccaca
2301 tatggacccc atcctcgaac aattccgcca gatcgcggcc caactcacct
2351 tcagcgcacc caccctgccc atcttgtcca acctcaccgg gcagatcgcc
2401 cgccacgacc aactcgctc acctgactat tggaccaaac agctacgtaa
2451 cactgtccgg ttccatgaca ctgtcgctgc cctgctcggg gcgggtgagc
2501 aggttttctt ggaaactttca cctcaccggg tgttgacaca agcgatcacc
2551 gacaccgtcg aacaagccgg cggcgcgccg gcagcagtcg cagctctacg
2601 caaggatcgc cctgatgctg tcgcgctcgc tgcagcactc ggccagctgc
2651 actgcatatg catcagccca tcctggaatg ttctttactg ccaggcccg
2701 cccctcacac tgcccaccta cgctttccag catcagcgtt actggctgct
2751 gccccaccgt ggtgatttca gcggggccaa taccacgcgc atgcatccgc

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FIGURE 8

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2801 tgctagacac cgccaccgaa ctggccgaaa accgcggatg ggtgttcacc
2851 ggccggatca gcccacgcac ccaaccatgg ctaaacgaac acgccgtcga
2901 atcagccgtg ctgttcccga acaccggatt tgtcgagcta gcgctgcatg
2951 tcgctgaccg tgccggatat tcctcgggtca acgaactgat cgtgcacacc
3001 cccctgctgc tcgctggcca cgacacccgc gatctacaga tcaccgtcac
3051 cgacaccgat gacatgggcc ggagtcctct taacatccac tcgcacccac
3101 atatcggcca tgacaacacc accaccggcg atgaacaacc cgagtgggtc
3151 ctgcatgcc a ggcagtcct gaccgcacaa accaccgacc acaaccacct
3201 cccctaacg cctgtgccgt ggctccacc cggcacagcc gcgatcgagg
3251 tggatgactt ctacgacgac ctggctgcac agggctacaa ctacggcccg
3301 acattccaag gtgtgcaacg gatatggcgt gaccacgcca caccgatgt
3351 catctacgcc gaagttgaac taccgaaga caccgacatc gacggctacg
3401 gcatccaccc cgccctatcc gacgcgctt tacacccctt actcgccctg
3451 acccaacccc ccaccaacga accgatgac accaaccacg cagacaccgg
3501 ggaccagggt cggctgcctt acgcctttac cggcatcagt ttgcacgcca
3551 cccacgccac ccgattgagg gtacggctga cccgtaccgg cgcgatgcc
3601 atcacctgac acaccagtga caccacggga gcccgggtgg cgatcatcga
3651 ctcatgtatc acccgcccc tcaccaccgc cacagggtct gctccggcaa
3701 ccacagcagc tggcctacta cactgagct ggccaccaca cctgacacc
3751 acgaccgaca ccgacaccga caccgatgcc ctgcggtatc aggtgatcgc
3801 cgaacccact caacaactgc cccgtacct gcacgaccta cacaccagca
3851 ccgacctgca caccagcacc accgaagcag acgtggttgt gtggccggtg
3901 ccggtgcccc gcaacgaaga gctccaggca caccaagcat ccgacaccgc
3951 ggtgtcttct cgtatgacac cctgacccg ccaaacactt accgtggtgc
4001 aggactggct cactcaccac gacaccaccg gcaaccgact ggtcatcgtg
4051 acccgccacg gcgtcagcac cagtgccac gaccgggtcc ccgacctagc
4101 ccacgccgca gtgtggggcc tgatccgcag cgcacaaac gaacaccccg
4151 gacgcttcac actgctcgac accgacgaca acaccaacag cgacaccctc
4201 accaccgccc taacctgcc aaccgcgaa aaccaactgg ccatacgccg
4251 cgacaccatc cacatccccc gcctgaccgg acacagcagt gacgggtgcg
4301 tcaactgcgc ggtggtggtg gatcctgagg gcacgggtgt gatcaccggg
4351 gggacgggga cgctgggtgc cttgttcgcc gagcatctgg tttctgcca
4401 tgggtgccgg catctgttgt tgacctcgcg gcgcggacct caggcccacg
4451 gtgccaccga tctgcagcag cggctcacgg atctaggtgc tcatgtcacc
4501 atcacggcct gcgatatcag cgaccacgaa gcaactggcc ccctggtcaa
4551 ttcaagtccc acacaacacc gttaaccgc ggtagtgcac accgccgcgg
4601 tattggccga cccccggtc accgagttga ccggcgatca actcgaccag
4651 gtgctggccc ccaaaatcga cgcgcgatgg cagctgcacc aactcaccta
4701 cgaacacaa ctgtctgcat tcatcatgtt ctgctccatg gccggaatga
4751 taggcagtcc cggtcagggt aactacgcgg cagccaacac cgcgttagat
4801 gctctcgcc actaccgcca ccgctgggc ttgccgcga ccagcctggc
4851 ctggggctac tggcagactc aaccggtct caccgcgat ctaaccgatg
4901 tagatctagc ccgcatgacc cgcctgggtt tgatgcccac gccaccagc
4951 caggactgg ccctgttcga tgccgccctc gccaccggac agcccgtttc
5001 gataccgcc ccgatcaaca cccacacct ggcccacac gccgcgaca
5051 acacctggc ccgatcctg tctgcgctga tcaccacacc acggcgccgg
5101 gggcctctg ccgcaaccga tctcgtgcc cgcctcaac gacttagccc
5151 ccaacagcaa caacaaacac tggccacct cgtggccgc gccaccgcca
5201 ccgtgctgg ccaccacacc ccgaagca tcagcccagc caccgcgttc
5251 aaagacctcg gaatcgattc gctga ccgc cttgaactgc gcaacacctt
5301 caccacaaac accggcctca accttcgtc cactcttatc ttcgatcacc
5351 ccacacccca tgcggtggcc gagcatctgc ttgaacagat ccctggcatc
5401 ggtgccctgg tgccggctcc ggtggtgatc gcagctggtc gtaccgagga
5451 gccggtggcg gtggtgggga tggcgtgtcg tttccccggg ggtgtcgcat
5501 cagcggatca gttgtgggac ttggtgatcg ctggccgtga tgtggtgggt
5551 aattttccgg ccgatcgggg ttgggatgtg gagggactgt ttgatccga
5601 tccggacgcg gtcggcaaaa cctacacctg ttacggcgcg ttccttgacg

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FIGURE 8(continued)

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5651 atgcggcagg tttt gatgcc gggttctttg ggatctctcc acgggaggca
5701 cgcgcgatgg acccccagca gcggctgctg ctggagggtg gctgggaagc
5751 gctagaaacc gcgggtattc ccgcgcacac cttggccggc acctccaccg
5801 gggatttcgt cggagcctgg gccagtcctt acggcgccac caactccgat
5851 gacgctgagg ggtatgcgat gaccggcggc gcgactagcg tcatgtccgg
5901 ccgtatcgcc tacaccttgg gcctagaagg tccagcgatc accgttgaca
5951 ccgcctgctc gtcacgctg gtggcaattc acctggcctg ccaatcctta
6001 cgcaacaacg aatcccagct agcactggcc ggccggcgta ccgtgatgag
6051 cacacctgcy gttttcaccc agttctctcc ccaacgcggc ctggccccag
6101 atggacgctg caaagccttc gccgctaccg ccgatggcac cggctggggg
6151 gaaggcgccg cggctcttgg ccttgaacgg ctctccgagg ccgcgccgaa
6201 caaccacccg gtccttgcca tcgtcgctgg atcggcgatc aaccaagacg
6251 gcgcatacaa cggactgacc gcaccccacg gcccgtcaca acaacgcgtc
6301 atcaaccaag cactagccaa cgcgcgcctc acccagacc aggtcgacgc
6351 cgtcgaagcc cacggcaccc gcaaccacact gggtgacccc atcgaagcca
6401 gcgccttaca cgccacctac ggcaccacc acacgcccga tcaaccgctt
6451 tggctgggat ccatcaaata caacatcgcc cacaccgaag ccgcgccggg
6501 cgccgcgggt gtggtcaaga tgatccaagc catcacccac gccaccttgc
6551 ccgccacctt gcacgtcgac caacccagcc cccacatcga ctggtccagc
6601 ggcacagtcc gactcctaac cgaagccatc caatggccca acaccgacca
6651 ccccgccacc gcggcggtgt cctcattcgg catcagcggc accaacgccc
6701 acctcatcct ccaacaaccc cccacccta acccacaca aacccccgag
6751 gactgcagcc ccgcacaata tccctgcgca acaatcaccc atgcaggcac
6801 gggattatcg tttgtgccct gggtgatttc agcgaagtcg gctgaggcgt
6851 tgtctgcgca ggcgagccga ttgttgacgc gccttgacga tgatccagtt
6901 gtcgatgcaa tcgacctggg gtggtcattg atagccactc gatcgatgtt
6951 tgagcatcgc gcagtagttg tgggtgcgga tcgtcaccag ttgcagcgcg
7001 gggtggccga gttggcttct ggttaacttg gcgcggatgt agtggggggc
7051 cgggcccgcg cagcgggcca gactgtaatg gtgtttcccg gtcagggatc
7101 acagcggttg ggcattggcg cgcagcttta tgaacaattc ccggtattcg
7151 cggcgcggtt tgatgacgtt gttgatgcgc tggaccagta tctgcggttg
7201 ccgctacgcc aagttatgtg gggtgacgat gaaggcctgc tcaattcaac
7251 ggagttcgcc cagccgtcgt tgtttgctgt cgaggtcgca ctgtttgcgt
7301 tgcctgcgct ctggggtgtc gttccggatt acgtgatagg ccattcggtg
7351 ggagagctgg ccgctgcaca agtggctggc gttttgagcc tgcaggacgc
7401 ggctaaatta gtttcagcgc ggggccgact gatgcaggcc ctgcccggcg
7451 gtggagcgat ggtcgcggtg gccgccagcc agcatgaagt cgagcctttg
7501 ctgggtgaag gggctgatat cgcggcgctc aatgcgccag ggtcagttgt
7551 gatctctggt gatcaggcgg cagtcggttt gatcgcta atcgattggcg
7601 ataggggcta cagggcgcac gaacttgccg tttcgcatgc ctttcattca
7651 tcgttgatgg agccgatgtt ggaggagttc gctcggctcg cttctgaaat
7701 cgttggtggg caaccgcaga ttccactgat ttggaacgtg actggtcagc
7751 tggccaacgc cgactacggg tcggcagggt actgggtgga ccacatccgc
7801 cgtccagtcg gtttcgcca tagtgctcgt tcgttggaag ccatgggggc
7851 tagctgcttc attgaagtcg gtcacagccag cgggttgggc gcagctatcg
7901 agcaatcctt gaaatctgcc gagccgaccg tgtcagtgtc ggcactgtcc
7951 accgataaac ctgaatccgt cgcggtattg cgcgctgcag cacgactttc
8001 cacctccggc attcctgtgg attggcagtc ggtgttcgac ggccgcagca
8051 cccagacagt taacctgccc acctacgctc tccagcgcca acggttctgg
8101 ctcgacgcca accgtatcgg tcaaggcgat cccgccagtc aaccacaggc
8151 ccagaacgtt gaatcccggt tttgggaggc ggtcgagcgg gaagacgttg
8201 atggcttggc tgattctata ggtgtcaccg ccagtgccat gcagaccgtg
8251 ctacctgcat tgtcttcata gcgtcgcgcg gagcgcacac agtccgagct
8301 tgattcctgg cgtatcagg tgacatggct gtcttcccca gcaacgccga
8351 gttcgatcac gctgtccggc atttgggttg tgatagtcc aagcgaactt
8401 gcaaagactg acccagtaat tggatgtgct gcagcgctcg aagcgacagg
8451 cgccttagtc acgattatca caattttcga gccggacttc aatcgctcat

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FIGURE 8(continued)

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8501  tgatgggagc  ttccctaata  gatatacggt  cacacatata  tgggtgcata
8551  tcgttcttag  ggattcacgg  gtccgaattc  tccgatagcg  gcgcgggtcaa
8601  gacattaaat  cttgtgcaag  caatgggcga  tgtccactta  gacgttcctt
8651  tgtgggtgct  aacgcagggc  gcggtatcga  tcagcgccga  cgatttgatc
8701  cgatgctcgt  cagcagccct  ggtgtggggt  ctggggagag  tcgtcgcatc
8751  agagcaccgg  ggatcgtggg  gtggcttagt  agacctcccc  gagtcaccgg
8801  acgatgcagc  atgggagcgc  ttgtgcgccc  tcctcgcgca  gccgacggat
8851  gaagatcagt  ttgcgatcag  gccgtctggg  gttttcctac  ggagattgat
8901  ccacgccccg  gcaaccacga  catccaaatc  ctcgaccgcg  tgggctccga
8951  gggggaccgt  gttaatcaca  ggcggcacag  gcgcgttagg  cgcacacgtc
9001  gcaagggtgg  tggcccacaa  atatgaatcg  gtagatttgc  tcttaaccag
9051  ccgtcgcggg  atggcagccg  atggagctac  agagctagtg  gatgacctcc
9101  gcacggctgg  cgccagtgtg  acagtgcacg  cctgcgacgt  gacagaccgc
9151  acttcagtcg  aggctgcaat  agcaggtaaa  tcccttgatg  cggctcttca
9201  tcttgacagc  cgacaccagc  caactctgct  aacagaactc  gaggacgaat
9251  ccttttagtga  cgaattggcg  ccgaagggtc  acggtgccc  agtattgagt
9301  gacatcacgt  ctaacctcac  actatcagcg  tttgtcatgt  tctcgtcagt
9351  agccggaatc  tggggcgcca  aaagtcaagg  cgcataatgt  gccgctaacc
9401  cattcttaga  ttcgctcgcc  gagaaacggc  gcacgttggg  gttaccagca
9451  acatcggtcg  cttggggact  gtgggctggc  ggcgcatggg  gagaccggcc
9501  atccgcttcg  ggactaaacc  ttattggctt  gaaatcgatg  tcagcagatt
9551  tagctgtgca  ggcgctaagc  gacgccattg  acagaccgca  agcaacattg
9601  actgttgcca  gcgtcaactg  ggatcgggtc  taccacacat  tcgctttggc
9651  gcgaccgagg  cccttcctac  acgaaatcac  agaggtaatg  gcttaccgcg
9701  agtcgatgcg  ctcaagctct  gcatcgacgg  cgacgctcct  gacgagcaaa
9751  ttagccggac  taacggcgac  agaacagcgt  gcagtcaccc  ggaagtgggt
9801  ccttgatcaa  gccgcatccg  ttctcgggta  cgcctcaact  gagagtctcg
9851  atactcatga  gtcattcaaa  gacctcggat  ttgattoctg  gaccgcccct
9901  gaactgcgcg  accacctcca  aactgcgacc  ggccctcaac  tttcgtccac
9951  tcttatcttc  gatcacccca  caccctatgc  ggtggccgag  catctgcttg
10001 aacagatccc  tggcatcggt  gccctggtgc  cggctccggg  ggtgatcgca
10051 gctggtcgta  ccgaggagcc  ggtggcggtg  gtggggatgg  cgtgtcgttt
10101 ccccggtggg  gtcgcatcag  cggatcagtt  gtgggacttg  gtgatcgctg
10151 gccgtgatgt  ggtgggtaat  ttcccgcccg  atcgggggtg  ggatgtggag
10201 ggactgtttg  atcccgatcc  ggacgcggtc  ggcaaacctt  acaccggtta
10251 cggcgcggtc  cttgacgatg  cggcagggtt  tgatgccggg  ttctttggga
10301 tctctccacg  ggaggcacgc  gcgatggacc  cccagcagcg  gctgctgctg
10351 gaggtgtgct  gggaagcgct  agaaaccgcg  ggtattcccg  cgcacacctt
10401 ggccggcacc  tccaccgggg  tattcgtcgg  agcctgggcc  cagtcctacg
10451 gcgccacca  ctccgatgac  gctgaggggt  atgcgatgac  cggcggcgcg
10501 actagcgtea  tgtecgcccg  tategcctac  accttggggc  tagaagggtc
10551 agcgatcacc  gttgacaccg  cctgctcgtc  atcgtggtg  gcaattcacc
10601 tggcctgcca  atccttacgc  aacaacgaat  cccagctagc  actggccggc
10651 ggcgtcaccg  tgatgagcac  acctgcgggt  ttcaccgagt  tctcccgcca
10701 acgcggcctg  gcccagatg  gacgctgcaa  agccttcgcc  gctaccgccg
10751 atggcaccgg  ctggggtgaa  ggcgcccgcg  tcttggtcct  tgaacggctc
10801 tccgaggccc  gccgaacaa  ccaccgggtc  cttgcgatcg  tcgctggatc
10851 ggcgatcaac  caagacggcg  catccaacgg  actgaccgca  cccacggcc
10901 cgtcacaaca  acggtcctc  aaccaagcac  tagccaacgc  cggcctcacc
10951 cagcaccagg  tcgacgccc  cgaagccac  ggcaccggca  ccacactggg
11001 tgaccccatc  gaagccagcg  ccctacacgc  cacctacggc  caccaccaca
11051 cggccgatca  accgctttgg  ctgggatcca  tcaaatacaa  catcggccac
11101 acccaagccg  ccgcggcgcg  cgccgggtgt  gtcaagatga  tccaagccat
11151 caccacgccc  accttgccc  ccaccttgca  cgtcgaccaa  cccagccccc
11201 acatcgactg  gtccagcggc  acagtccgac  tcctaaccga  gcccatccaa
11251 tggcccaaca  ccgaccaccc  ccgcaccgcg  gcggtgtcct  cattcggcac
11301 cagcggcacc  aacgcccacc  tcactctcca  acaaccccc  acccctaacc

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FIGURE 8(continued)

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11351 ccacacaaac ccccgaggac tgcagccccg cacaatctcc ctgcgcaaca
11401 atcaccgatg caggcacggg attatcgttt gtgccctggg tgatttcagc
11451 gaagtggctt gaggcggtgt ctgcgaggc gagccgattg ttgacgcgcc
11501 ttgacgatga tccagttgtc gatgcaatcg acctggggtg gtcattgata
11551 gccactcgat cgatgtttga gcatcgcgca gtagttgtgg gtgcggatcg
11601 tcaccagttg cagcgcgggt tggccgagtt ggcttctggg aacttgggctg
11651 ccgatgtagt ggtgggccgg gcccgcgag cgggcgagac tgtaatggtg
11701 tttcccggtc agggatcaca gcggttgggc atgggcgcgc agctttatga
11751 acaattcccg gtattcgcg cggcgtttga tgacgttggt gatgcgctgg
11801 accagtatct gcggttgccg ctacgccaag ttatgtgggg tgacgatgaa
11851 ggctgtctca attcaacgga gttcgcccag ccgtcgttgt ttgctgtcga
11901 ggtcgactg tttgcgttgc tgcgcttctg ggggtgctgt ccggattacg
11951 tgataggcca ttcggtagga gagctggccg ctgcacaagt ggctggcggt
12001 ttgagcgtgc aggacgcggc taaattagtt tcagcgcggg gccactgat
12051 gcaggccctg cccgcgggtg gagcgatggt cgcggtagcc gccagccagc
12101 atgaagtoga gcctttgctg gttgaagggg tcgatatcgc ggcgctcaat
12151 gcgccagggt cagttgtgat ctctggtgat caggcggcag tccgtttgat
12201 cgctaatacg ttggcggata ggggctacag ggcgacgaa cttgcggttt
12251 cgcatgcctt tcattcatcg ttgatggagc cgatgttggg ggagttcgct
12301 cggtcgcctt ctgaaatcgt tgtggagcaa ccgcagattc cactgatttc
12351 gaacgtgact ggtcagctgg ccaacgccga ctacgggtcg gcaggttact
12401 ggggtgacca catccgccgt ccagtcggtt tcgcgatag tgcgcttcg
12451 ttggaagcca tgggggctag ctgcttcatt gaagtcggtc cagccagcgg
12501 gttgggcgca gctatcgagc aatccttgaa atctgccgag ccgaccgtgt
12551 cagtgtcggc actgtccacc gataaacctg aatccgtcgc cgtattgcgc
12601 gctgcagcac gactttccac ctccggcatt cctgtggatt ggcagtcggt
12651 gttcgacggc cgcagcacc agacagttaa cctgccacc tacgccttcc
12701 agcggcaacg gttctggctc gacgccaacc gtatcggtca aggcgatccc
12751 gccagtcaac cacaggccca gaacgttgaa tcccgttttt gggaggcggt
12801 cgagcgggaa gacgttgatg gcttggctga ttctataggt gtcaccgcca
12851 gtgccatgca gaccgtgcta cctgcattgt cttcatggcg tcgcgcggag
12901 cgcacacagt ccgagcttga ttcttgccgc tatcaggtag catggctgtc
12951 ttccccagca acgccgagtt cgatcacgct gtccggcatt tggttgctga
13001 tagttccaag cgaacttgca aagactgacc cagtaattgg atgtgctgca
13051 gcgctcgaag cgcacggcgc cttagtcacg attatcaca ttttcgagcc
13101 ggacttcaat cgctcattga tgggcgcttc cctaaaagat atcggttcac
13151 acatatctgg tgtcatatcg ttcttaggga ttacgggtc cgaattctcc
13201 gatagcggcg cggtcaagac attaaatctt gtgcaagcaa tgggcgatgt
13251 ccacttagac gttcctttgt ggtgcctaac gcaggcgcg gtatcgatca
13301 gcgcccagca tttgatccga tgctcgtcag cagccctggt gtggggtctg
13351 gggagagtcg tcgcattaga gcacccggga tcgtggggtg gcttagtaga
13401 cctccccgag tcacccgacg atgcagcatg ggagcgcttg tgcgccctcc
13451 tcgcgcagcc gacggatgaa gatcagtttg cgatcaggcc gtctggggtt
13501 ttcttacgga gattgatcca cgccccggca accacgacat ccaaaccctc
13551 gaccgcgtgg gctccgaggg ggaccgtgtt aatcacaggc ggcacaggcg
13601 cgtagggcgc acacgtcgca aggtggttgg ccacaaata tgaatcggtg
13651 gatttgctct taaccagccg tcgcgggatg gcagccgatg gagctacaga
13701 gctagtggat gacctccgca cggctggcgc cagtgtgaca gtgcagcct
13751 gcgacgtgac agaccgcact tcagtcgagg ctgcaatagc aggtaaatcc
13801 cttgatgcgg tctttcatct tgcaggacga caccagccaa ctctgctaac
13851 agaactcgag gacgaatcct ttagtgacga attggcgccg aaggttcacg
13901 gtgcccaggt attgagtac atcacgtcta acctcacact atcagcggtt
13951 gtcattgtct cgtcagtagc cggaatctgg ggcggcaaaa gtcaaggcgc
14001 atatgtgcc gctaacgcat tcttagattc gctcgccgag aaacggcgca
14051 cgttgggggt accagcaaca tcggtcgctt ggggactgtg ggctggcggc
14101 ggcattgggag accggccatc cgcttcggga ctaaacctta ttggcttgaa
14151 atcgatgtca gcagatttag ctgtgcaggc gctaagcgac gccattgaca

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FIGURE 8(continued)

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14201 gaccgcaagc aacattgact gttgcgagcg tcaactggga tcggttctac
14251 cccacattcg ctttggcgcg accgaggccc ttcttacacg aaatcacaga
14301 ggtaatggct taccgcgagt cgatgcgctc gagctctgca tcgacggcga
14351 cgctcctgac gagcaaatta gccggactaa cggcgacaga acagcgtgca
14401 gtcacccgga agttggtcct tgatcaagcc gcatccgttc tcgggtacgc
14451 ctcaactgag agtctcgata ctcatgagtc attcaaagac ctcggtttg
14501 attcgtgac cgcccttgaa ctgcgcgacc acctccaaac tgcgaccggc
14551 ctcaaccttt cgtccactct tatcttcgat caccacacac cccatgcggt
14601 ggccgagcat ctgcttgaac agatccctgg catcggtgcc ctggtgccgg
14651 ctccggtggg gatcgcagct ggtcgtaccg aggagccggt ggcggtgggtg
14701 gggatggcgt gtcgtttccc cgggtggtgtc gcatcagcgg atcagttgtg
14751 ggacttgggt atcgttgccc gtgatgtggt gggtaatttt ccggccgac
14801 ggggttggga tgtggaggga ctggttgatc ccgatccgga cgcggtcggc
14851 aaaacctaca cccgttacgg cgcgttcctt gacgatgcgg caggttttga
14901 tgccgggttc tttgggatct ctccacggga ggcacgcgg atggacccc
14951 agcagcggct gctgctggag gtgtgctggg aagcgtaga aaccgcgggt
15001 attccgcgc acaccttggc cggcacctcc accggggtat tcgtcggagc
15051 ctgggccag tcctacggcg ccaccaactc cgatgacgct gagggtatg
15101 cgatgaccgg cggcgcgac agcgtcatgt ccggccgtat cgcctacacc
15151 ttgggcctag aaggctccagc gatcaccgtt gacaccgcct gctcgtcatc
15201 gctggtggca attcacctgg cctgccaatc cttacgcaac aacgaatccc
15251 agctagcact gaccggcggc gtcaaccgtga tgagcacacc tgcgattttc
15301 accgagttct cccgccaaag cggcctggcc ccagatggac gctgcaaagc
15351 cttcgcgct accgcgatg gcaccggctg ggtgaaggc gccgcggtct
15401 tggctcctga acggtcttcc gaggcccgcc gcaacaacca cccggtcctt
15451 gcgatcgtcg ctggatcggc gatcaaccaa gacggcgcac ccaacggact
15501 gaccgcaccc caccggccgt cacaacaacg cgtcatcaac caagcactag
15551 ccaacgccgg cctcaccac gaccaggtcg acgccgtcga agcccacggc
15601 accggcacca cactgggtga ccccatcgaa gccagcggcc tacacgccac
15651 ctacggccac caccacacgc ccgatcaacc gctttggctg ggatccatca
15701 aatccaacat cggccacacc caagccgccg ccggcgcgcg cggtgtggtc
15751 aagatgatcc aagccatcac ccacgccacc ttgcccgcca ccttgcacgt
15801 cgaccaaccc agccccaca tcgactggtc cagcggcaca gtccgactcc
15851 taaccgagcc catccaatgg cccaacaccg accacccccg caccgcggcg
15901 gtgtctcat tcggcatcag cggcaccaac gccacacctc tcctccaaca
15951 accccccacc cccgacacca cacaacccc caacaaccaca acaggttctg
16001 atcccgagc ggggttctgat cccgcagtggt gtgtactggt gtggccgttg
16051 tcagcgcgtt cagcgcgggg gttaaagcgca caagcggccc gtctgtacca
16101 gcatctcagc gccacccccg atctggatcc gatcgatgta gccacagcc
16151 tggtaccac acgcagccac cacccccacc gcgccaccat caccaccagc
16201 attgagcacc acagcgaaaa caaccacgac acaaccgatg cgtggccgc
16251 actgcacgcc ctggccaaca acggcacaca cccctgctg agcagaggcc
16301 tgotgacccc acagggcccc ggcaaaacag tgttcgtgtt ccccgacag
16351 ggcagtcaat acccggcat gggcgcagat ctctaccgcc aattccccgt
16401 gttogccac gccctcgacg catgcgacgc agcgttacag cctttcactg
16451 gatggtcggt gctagctgtg ttacacgacg aacccgaggc ccgctcgttg
16501 gagcgagtcg atgtggtcca gcctgtgttg ttctcggtga tgggtgcgtt
16551 agccgcactc tggcggtggg ccggaatcac ccccgatgca gtcacggcc
16601 actccaggcg cgagatcgcc gcggcacatg tggccggagc cctgacctg
16651 ccgaagcag ctgcggtagt ggccttgccg agcgtgtct tgaccgacct
16701 ggccggtgcc ggtgccatgg cttcagtgct atcgcccgag gaaccactga
16751 ccagctgct ggcacggtgg gacggcaaga tcaactgtcg cgcagttaac
16801 ggccccgcta gcgctgtggt ctccggcgat accacagcga tcaccgaatt
16851 gctgattacc tgcgaacacg aaaacatcga cgtcgcgct atcccggtg
16901 actacccctc tcaattcccc tataatggaac acatccgcca tcagttcctc
16951 gacgagctac ccgagctgac accgcggcca tcaaccatcg cgatgtattc
17001 caccgtcgac ggcgaacctc acgacaccgc ctacgacacc accacaatga

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FIGURE 8(continued)

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17051 cgcgcggacta ctggtaccgc aacatccgta acactgtccg gttccatgac
17101 actgtcgcctg ccctgctcgg ggccgggtgag cagggttttcc tggaaactttc
17151 acctcaccocg gtgttgacac aagcgatcac cgacaacgtc gaacaagccg
17201 gcgcgcggcgg cgcagcagtg ccagctctac gcaaggatcg ccctgatgct
17251 gtcgcgtttcg ctgcagcact cggccagctg cactgccatg gcatcagccc
17301 atcctggaat gttctttact gccaggcccg ccccttcaca ctgcccacct
17351 acgctttcca gcatcagcgt tactggctgc tgcccaccgc tgggtgatttc
17401 agcggggcca ataccacgc catgcatccg ctgctagaca ccgccaccga
17451 actggccgaa aaccgcggat ggggtgttcac cggccggatc agcccacgca
17501 cccaaccatg gctaaacgaa cagcccgctc aatcagccgt gctgttccca
17551 ggcaccggtat ttgtcgagct agcgtgcat gtcgctgacc gtgccggata
17601 ttctcgcgtt aacgaactga tcgtgcacac cccctgctg ctgctggcc
17651 acgacaccgc ggatctacag atcaccgtca ccgacaccga tgacatgggc
17701 cggcagttctc ttaacatcca ctgcgcccc catatcggcc atgacaacac
17751 caccaccggc gatgaacaac ccgagtgggt cctgcatgcc agcgcagtcc
17801 tgaccgcaca aaccaccgac cacaaccacc tccccctaac gcctgtgccg
17851 tggcctccac ccggcacagc cgcgatcgag gtggaatgact tctacgacga
17901 cctggctgca cagggctaca actacggccc gacattccaa ggtgtgcaac
17951 ggatatggcg tgaccacgcc acaccgatg tcatctacgc cgaagttaa
18001 ctaccggaag acaccgacat cgacggctac ggcatccacc ccgccctatt
18051 cgacgcgcgt ttacaccccc tactgcacct gaccacaacc cccaccaacg
18101 acaccgatga caccaacacc gcagacaccg gtgaccaggt gcggctgccc
18151 tacgccttta ccggcatcag ttgacgcgc acccacgcca cccgattacg
18201 ggtacggctg acccgtaccg gcgcgatgc catcacctg cacaccagt
18251 acaccaccgg agcccgggtg gcgatcatcg actcattgat caccgcccc
18301 ctaccaccgg ccacagggtc tgctccggca accacagcag ctggcctact
18351 acacctgagc tggccaccac accctgacac cacgaccgac accgacaccg
18401 acaccgatgc cctgcggtat caggtgatcg ccgaaaccac tcaacaactg
18451 ccccgctacc tgcacgacct acacaccagc accgacctgc acaccagcac
18501 caccgaagca gacgtggttg tgtggccggt accggtgccc agcaacgaag
18551 agctccaggc acaccaagca tccgacaccg cgggtgtctt tcggatacac
18601 accctgaccc gccaaacact taccgtggtg caggactggc tcaactaccc
18651 cgacaccacc ggcacccgac tggctcatcg gaccgccac ggcgtcagca
18701 ccagtgccca cgaccgggtc ccgacctag ccacgccgc agtgtggggc
18751 ctgatccgca gcgccccaaa cgaacacccc ggacgcttca cactgctcga
18801 caccgacgac aacaccaaca gcgacaccct caccaaccgc ctaaccctgc
18851 caaccgcgca aaaccaactg gccatacgcc gcgacaccat ccacatcccc
18901 cgcctgaccc gacacagcag tgacggtgcg ctcactgcg cgggtggtgt
18951 agatcctgag ggcacggtgt tgatcaccgg ggggacggg acgctgggtg
19001 ccttggttcg cgagcatctg gtttctgccc atggtgtccg gcatctgtt
19051 ttgacctcgc ggcgcggacc tcaggccccc ggtgcaccg atctgcagca
19101 gcggctcacc gatctaggtg ctcatgtcac catcacggc tgcgatatca
19151 gcgaccccgga agcactggcc gccctggtca attcagtgc cacacaacac
19201 cgtttaaccg cggtagtgca caccgccgcg gtattggccg acaccgccgt
19251 caccgagttg accggcgatc aactcgacca ggtgctggcc cccaaaatcg
19301 acgcggcagtg gcagctgcac caactcacct acgaaacaaa cctgtctgca
19351 ttcacatcatg tctcgtccat ggccggaatg ataggcagtc ccggtcaggg
19401 taactacgcg gcagccaaca ccgcttaga tgctctcgcc gactaccgcc
19451 accgcctggg cttgcccgcg accagcctgg cctggggcta ctggcagact
19501 cacaccggtc tcaccgcgca tctaaccgat gtagatctag ccgcatgac
19551 ccgcctgggt ttgatgcca tcgccaccag ccaaggactg gccctgttcg
19601 atgcgcacct cgccaccgga cagcccgttt cgataccgc cccgatcaac
19651 acccacaccc tggcccgaca cgcccgcgac aacacacctg cccgatcct
19701 gtctgcgctg atcaccacac cagggcgccg ggcggcctct gccgcaaccg
19751 atctcgtctc ccgcctcaac ggacttagcc cccaaacgca acaacaacaa
19801 ctggccacc tcgtggccgc ggccaccgcc accgtgctgg gccaccacac
19851 ccccgaaagc atcagcccag ccaccgcgtt caaagacctc ggaatcgatt

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FIGURE 8(continued)

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19901	cgctgaccgc	ccttgaactg	cgcaacaccc	tcaccacaaa	caccggcctg
19951	gatctgcccc	ccaccctcat	cttcgatcac	cccacacccc	atgcgggtggc
20001	cgagcatctg	cttgaacaga	tccctggcat	cggtgccctg	gtgccggctc
20051	cggtagtgat	cgcagctggg	cgtaccga gg	agccgggtggc	ggtggtgggg
20101	atggcgtgtc	gtttccccgg	tggtgtcgca	tcagcggatc	agttgtggga
20151	cttggtgatc	gctggccgtg	atgtggtggg	taattttccg	gccgatcggg
20201	gttgggatgt	ggagggactg	tttgatcccg	atccggacgc	ggtcggcaaa
20251	acctacaccc	gttacggcgc	gttccttgac	gatgcggcag	gttttgatgc
20301	cgggttcttt	gggatctctc	cacgggaggc	acgcgcgatg	gacccccagc
20351	agcggctgct	gctggagggtg	tgctgggaag	cgctagaaac	cgcggttatt
20401	cccgcgcaca	ccttggccgg	cacctcca cc	ggggtattcg	ccggagcctg
20451	ggcccagtc	tacggcgcca	ccaactccga	tgacgctgag	gggtatgcga
20501	tgaccggcgg	ctcgactagc	gtcatgtccg	gccgtatcgc	ctacaccttg
20551	ggcctagaag	gtccagcgat	caccgttgac	accgcctgct	cgtcatcgct
20601	ggtggcaatt	cacctggcct	gccaatcctt	acgcaacaac	gaatcccagc
20651	tagcactggc	cggcggcgtc	accgtgatga	gcacacctgc	ggttttcacc
20701	gagttctccc	gccaacgcgg	cctggccccca	gatggacgct	gcaaagcctt
20751	cgccgctacc	gccgatggca	ccggctttgg	tgaaggcgcc	gcggtcttgg
20801	tccttgaacg	gctctccgag	gcccgcgcga	acaaccaccc	ggtccttgcg
20851	atcgctcgctg	gatcggcgat	caaccaagac	ggcgcaccca	acggactgac
20901	cgcacccccc	ggcccgtcac	aacaacgcgt	catcaaccaa	gcactagcca
20951	acggccggcct	caccacgac	caggtcgacg	ccgtcgaagc	ccacggcacc
21001	ggcaccacac	tgggtgacct	catcgaagcc	agcgccctac	acgccacctt
21051	cggccaccac	cacacgcccg	atcaaccgct	ttggctggga	tccatcaaat
21101	ccaacatcgg	ccacacccaa	gccgcgcgcg	gcgccgcggg	tgtggtcaag
21151	atgatccaag	ccatcaccca	cgccaccttg	cccgccacct	tgcacgtcga
21201	ccaacccagc	ccccacatcg	actggtccag	cggcacagtc	cgactcctaa
21251	ccgagcccat	ccaatggccc	aacaccga cc	acccccgcac	cgcggcgggtg
21301	tcctcatctg	gcatcagcgg	caccaacgcc	cacctcatcc	tccaacaacc
21351	ccccaccccc	gacaccacac	aaacccccaa	ccccacaaca	ggttctgac
21401	ccgcagtggtg	ttctgatccc	gcagtggttg	tactggtgtg	gccgttgtca
21451	gcgcgttcag	cgccgggggt	aagcgcacaa	gcggcccgtc	tgtaccagca
21501	tctcagcgcc	caccccgatc	tggtatccgat	cgatgtagcc	cacagcctgg
21551	ctaccacacg	cagccaccac	ccccaccgcg	ccaccatcac	caccagcatt
21601	gagcaccaca	gcgaaaacaa	ccacgacaca	accgatgcgc	tggccgcact
21651	gcacgccctg	gccaacaacg	gcacacaccc	cctgctgagc	agaggcctgc
21701	tgacccccaca	gggccccggc	aaaacagtgt	tcgtgttccc	cggacagggc
21751	agtcaatacc	ccggcatggg	cgcagatctc	taccgccaat	tccccgtgtt
21801	cgccccagcg	ctcgacgagg	tcgtgcggcg	gctgaaccgc	catctcgatg
21851	ttgctgtgct	tgaggtgatg	ttcagccaac	aagacactgc	catggcgcaa
21901	ctgctggacc	agaccttcta	tgcacaaccg	gcgttgttcg	cgctgggaac
21951	cgctctacat	cgattgttca	cccacgccgg	tatccaccgc	gactacctgc
22001	taggccactc	catcgagaaa	ctcaccgcgg	catacgccgc	cggtgtgctg
22051	tcactgcaag	acgcagccac	cttggtcaca	agccgaggac	gactgatgca
22101	atcctgcacg	cccggcggga	cgatgctcgc	actacaagcc	agcgaagcag
22151	aagtacaacc	gctgcttgaa	ggcctagacc	acgccgtgtc	catcgccgcg
22201	atcaacggag	caacgtcgat	cgtactgtca	ggagatcacg	acagcctcga
22251	acaaatcggc	gagcacttca	ttacccaaga	tcgacgtacc	acccgactgc
22301	aggtcagtc	cgtttccac	tctccacata	tggaccccat	cctcgaacaa
22351	ttccgccaga	tcgcggccca	actcaccttc	agcgcaccca	ccctgcccac
22401	cttgtccaac	ctcaccgggc	agatcgcccg	ccacgaccaa	ctcgcctcac
22451	ctgactattg	gacccaacag	ctacgtaaca	ctgtccgggt	ccatgacact
22501	gtcgtgccc	tgctcggggc	gggtgagcag	gttttcctgg	aactttcacc
22551	tcacccgggtg	ttgacacaag	cgatcaccga	caccgtcgaa	caagccggcg
22601	gcggcggcgc	agcagtgcc	gctctacgca	aggatcgccc	tgatgctgtc
22651	gcgttcgctg	cagcactcgg	ccagctgcac	tgccatggca	tcagcccatc
22701	ctggaatggt	ctttactgcc	aggcccgccc	cctcacactg	cccacctacg

FIGURE 8(continued)

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22751 ctttccagca tcagcggttac tggetgctgc ccaccgctgg tgatttcagc
22801 ggggccaaata cccacgccat gcatccgctg ctagacaccg ccaccgaact
22851 ggccgaaaac cgcggatggg tgttcaccgg ccggatcagc ccacgcaccc
22901 aaccatggct aaacgaacac gccgtcgaat cagccgtgct gttccagggc
22951 accggatttg tcgagctagc gctgcatgtc gctgaccgtg ccggatattc
23001 ctcggtcaac gaactgatcg tgcacacccc cctgctgctc gctggccacg
23051 acaccgcgga tctacagatc accgtcaccg acaccgatga catggggcgg
23101 cagtctctta acatccactc gcgcccacat atcggccatg acaacaccac
23151 caccggcgat gaacaacccg agtgggtcct gcatgccagc gcagtcctga
23201 ccgcacaaac caccgaccac aaccacctcc ccctaacgcc tgtgccgtgg
23251 cctccacccg gcacagccgc gatcgagggt gatgacttct acgacgacct
23301 ggctgcacag ggctacaact acggcccgcac attccaaggt gtgcaacgga
23351 tatggcgtga ccacgccaca ccgatgtca tctacgccga agttgaacta
23401 cccgaagaca ccgacatcga cggctacggc atccaccccc ccctattcga
23451 cgccgcttta cccccctac tgcacctgac ccaaccccc accaaccgac
23501 ccgatgacac caacaccgca gacaccggtg accagggtgcg gctgccctac
23551 gcctttaccg gcatcagttt gcacgccacc cacgccaccc gattgcgggt
23601 acggctgacc cgtaccggcg ccgatgccat caccgtgcac accagtgaac
23651 ccaccggagc ccggtggcg atcatcgact cattgatcac ccgccccctc
23701 accaccgcca cagggtctgc tccggcaacc acagcagctg gcctactaca
23751 cctgagctgg ccaccacacc ctgacaccac gaccgacacc gacaccgaca
23801 ccgatgccct gcggtatcag gtgatcgccg aaccactca acaactgcc
23851 cgctacctgc acgacctaca caccagcacc gacctgcaca ccagcaccac
23901 cgaagcagac gtggttgtgt ggccggtacc ggtgccccagc aacgaagagc
23951 tccaggcaca ccaagcatcc gacaccgcgg tgtcttctcg gatacacacc
24001 ctgaccgcc aaacacttac cgtggtgcag gactggctca ctacccccga
24051 caccaccggc acccgactgg tcatcgtgac ccgccacggc gtcagcacca
24101 gtgcccacga cccggtcccc gacctagccc acgccgcagt gtggggcctg
24151 atccgcagcg cccaaaacga acaccccgga cgcttcacac tgctcgacac
24201 cgacgacaac accaacagcg acaccctcac caccgcccta accctgccaa
24251 cccgcgaaaa ccaactggcc atacgcgcg acaccatcca catccccgc
24301 ctgaccgcac acagcagtga cgggtgcgctc actgcgcggg tgggtggtaga
24351 tcctgagggc acggtgttga tcaccggggg gaccgggacg ctgggtgcct
24401 tgttcgccga gcatctggtt tctgcccatg gtgtccggca tctgttgttg
24451 acctcgcggc gcggacctca ggcccacggg gccaccgatc tgcagcagcg
24501 gctcaccgat ctagggtgctc atgtcaccat cacggcctgc gatatacagc
24551 accccgaagc actggccgccc ctggtcaatt cagtgccac acaacaccgt
24601 ttaaccgcgg tagtgcacac cgccgcggta ttggccgaca ccccggtcac
24651 cgagttgacc ggcatcaac tcgaccaggt gctggcccc aaaatcgacg
24701 cggcatggca cgtgcaccaa ctacactacg aacacaacct gtctgcattc
24751 atcatgttct cgtccatggc cggaaatgata ggcagtcccg gtcagggtaa
24801 ctacgcggca gccaacaccg cgttagatgc tctcgccgac taccgccacc
24851 gcctgggctt gcccgcgacc agcctggcct ggggctactg gcagactcac
24901 accggtctca ccgcgatct aaccgatgta gatctagccc gcatgaccog
24951 cctgggtttg atgccatcg ccaccagcca cggactggcc ctgttcgatg
25001 ccgccctcgc caccggacag ccggtttcga taccgcccc gatcaacacc
25051 cacaccctgg cccgacacgc ccgcgacaac accctggccc cgatcctgtc
25101 tgcgctgac accacaccac ggcccgggc ggctctgccc gcaaccgatc
25151 tcgctgccc cctcaacgga cttagccccc aacagcaaca acaaacactg
25201 gccaccctcg tggccgcggc caccgccacc gtgctgggccc accacacccc
25251 cgaaagcatc agcccagcca ccgcgttcaa agacctcgga atcgattcgc
25301 tgaccgccct tgaactgcgc aacaccctca cccacaacac cggcctggat
25351 ctgcccccca cctcatctt cgatcacccc acaccccatg cgggtggcga
25401 gcatctgctt gaacagatcc ctggcatcgg tgccctgggt cgggtccgg
25451 tgggtgatcg agctggtcgt accgaggagc cgggtggcgg ggtggggatg
25501 gcgtgtcgtt tccccggtgg tgtcgcatca gcggatcagt tgtgggactt

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FIGURE 8(continued)

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25551 ggtgatcgct ggccgtgatg tgggtgggta a ttttccggcc gatcgggggtt
25601 gggatgtgga gggactgttt gatcccgat c cggacgcggt cggcaaaacc
25651 tacacccggt acggcgcggt ccttgacga t gcggcagggt ttgatgccgg
25701 gttcttttggg atctctccac gggaggcac g cgcgatggac ccccagcagc
25751 ggctgctgct ggaggtgtgc tgggaagcgc tagaaaccgc ggggtattccc
25801 gcgcacacct tggccggcac ctccaccgg gtattcgccg gagcctgggc
25851 ccagtcctac ggcgccacca actccgatga cgctgagggg tatgcatga
25901 ccggcggcgc gactagcgtc atgtccggc c gtatcgcta caccttgggc
25951 ctagaaggtc cagcgatcac cgttgacac c gcctgctcgt catcgctggt
26001 ggcaattcac ctggcctgcc aatccttac g caacaacgaa tcccagctag
26051 cactggccgg cggcgtcacc gtgatgagca cacctgcggt tttcaccgag
26101 ttctcccgcc aacgcggcct ggccccaga t ggacgctgca aagccttcgc
26151 cgctaccgcc gatggcaccg gctttggtga aggcgcgcg gtcttggtcc
26201 ttgaacggct ctccgaggcc cgcgcaca accaccgggt ccttgcgatc
26251 gtcgctggat cggcgatcaa ccaagacgg c gcatccaacg gactgaccgc
26301 accccacggc ccgtcacaa aacgcgtca t caaccaagca ctagccaacg
26351 ccggcctcac ccacgaccag gtcgacgcc g tcgaagcca cggcaccggc
26401 accacactgg gtgaccccat cgaagccag c gccctacag ccacctacgg
26451 ccaccaccac acgcccgatc aaccgcttt g gctgggatcc atcaaatcca
26501 acatcgccca cacccaagcc gccgcggcg c cgccgggtgt ggtcaagatg
26551 atccaagcca taccaccagc caccttgccc gccaccttgc acgtcgacca
26601 acccagcccc cacatcgact ggtccagcgg cacagtccga ctccataaccg
26651 agccccatca atggcccaac accgaccac c ccgcaccgc ggcggtgtcc
26701 tcattcgcca tcagcggcac caacgcccac ctcatcctcc aacaaccccc
26751 cacccccagc accacacaaa cccccaacac cacaacagggt tctgatcccg
26801 cagtgggttc tgatcccgca gtgggtgtac tgggtgtggc gttgtcagcg
26851 cgttcagcgc cggggttaag cgcacaagc g gccggtctgt accagcatct
26901 cagcggccac ccgatctgg atccgatcga tgtagccac agcctggcta
26951 ccacacgcag ccaccacccc caccgcgcca ccatcaccac cagcattgag
27001 caccacagcg aaaacaacca cgacacaacc gatgcgctgg ccgactgca
27051 cgccctggcc aacaacggca cacaccccct gctgagcaga ggctgctga
27101 cccacaggg ccccgcaaa acagtgttcg tgttccccg acagggcagt
27151 caatacccg gcattggcgc agatctctac cgccaattcc ccgtgttcgc
27201 ccacgccctc gacgcatgcg acgcagcgt t acagcctttc actggatggt
27251 cgggtgctagc tgtgttacac gacgaaccg agggcccgtc gttggagcgg
27301 gtcatgtgg tccagcctgt gttgttctc g gtgatggtgt cgttagccgc
27351 actctggcgg tgggcccga tacccccga tgcagtcac ggccactccc
27401 agggcgagat cgccgcggca catgtggccg gagccctgac cttgcccga
27451 gcagctgcgg tagtggttt ggcgagccgt gtcttgaccg acctggccgg
27501 tgccggtgcc atggcttcag tgctatcgcc cgaggaaacca ctgaccagc
27551 tgctggcacg gtgggacggc aagatcactg tcgccgagt taacggcccc
27601 gctagcgctg tgggtctccg cgataccaca gcgatcaccg aattgctgat
27651 tacctgcgaa cagcaaaaca tcgacgctc g cgtatcccg gtggactacc
27701 cctctcatte cccctatatg gaacacatcc gccatcagtt cctcgacgag
27751 ctacccgagc tgacaccgcg gccatcaacc atcgcatgt attccaccgt
27801 cgacggcgaa cctcacgaca ccgcctacga caccaccaca atgaccgcg
27851 actactggta ccgcaacatc cgtaaacactg tccggttcca tgacactgtc
27901 gctgccctgc tcggggcggg tgagcaggt t ttccctggaac ttccacctca
27951 cccggtgttg acacaagcga tcaccgacac cgtcgaaaca gccggcggcg
28001 gcggcgacg agtgccagct ctacgcaagg atcgccctga tgctgtcgcg
28051 ttcgctgcag cactcgcca gctgactgc catggcatca gccatcctg
28101 gaatgttctt tactgccagg cccgccccct cacactgccc acctacgctt
28151 tccagcatca gcgttactgg ctgctgccca ccgctggtga tttcagcggg
28201 gccaataccc acgcatgca tccgctgcta gacaccgcca ccgaactggc
28251 cgaaaaccgc ggatgggtgt tcaccggccg gatcagccca cgcaccaaac
28301 catggctaaa cgaacacgcc gtcgaatcag ccgtgctgtt cccaggcacc
28351 ggatttgtcg agctagcgct gcatgtcgct gaccgtgccg gatattcctc

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FIGURE 8(continued)

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28401 ggtcaacgaa ctgatcgtgc acacccccct gctactcgct ggccacgaca
28451 ccgcgatctt acagatcacc gtcaccgaca ccgatgacat gggccggcag
28501 tctcttaaca tccactcgca cccacatata ggccatgaca acaccaccac
28551 cggcgatgaa caaccccgag gggtcctgca tgccagcgca gtcctgaccg
28601 cacaaccac cgaccacaac cacctcccc taacgcctgt gccgtggcct
28651 ccacccggca cagccgcgat cgaggtggat gacttctacg acgacctggc
28701 tgcacagggc tacaactacg gcccgacatt ccaaggtgtg caacggatat
28751 ggcgtgacca cgccacaccc gatgtcatct acgccgaagt tgaactacc
28801 gaagacaccg acatcgacgg ctacggcatc caccgccccc tattcgacgc
28851 cgcttttacac cccctactcg ccctgaccca acccccacc aacgacaccg
28901 atgacaccaa caccgcagac accggtgacc aggtgcggct gccctacgcc
28951 tttaccggca tcagtttgca cgccaccac gccaccgat tgcgggtacg
29001 gctgaccgtt accggcgccg atgccatcac cgtgcacacc agtgacacca
29051 ccggagcccc ggtggcgatc atcgactcat tgatcaccgg cccctcacc
29101 accgccacag ggtctgctcc ggcaaccaca gcagctggcc tactacacct
29151 gagctggcca ccacaccctg acaccacgac cgacaccgac accgacaccg
29201 atgccctgcg gtatcggtg atcgccgaac cactcaaca actgccccgc
29251 tacctgcacg acctacacac cagcaccgac ctgcacacca gcaccaccga
29301 agcagacgtg gttgtgtggc cggtaaccgt gccagcaac gaagagctcc
29351 aggcacacca agcatccgac accgcggtgt cttctcggat acacaccctg
29401 acccgccaaa cacttaccgt ggtgcaggac tggtcactc accccgacac
29451 caccggcacc cgactgggtc tctgaccgg ccacggcgct agcaccagt
29501 cccacgaccc ggtccccgac ctgacccacg ccgcagtgtg gggcctgatc
29551 cgcagcgccc aaaacgaaca ccccgacgc ttcaactgc tcgacaccga
29601 cgacaacacc aacagcgaca ccctcaccac cgccctaacc ctgccaaccc
29651 gcgaaaacca actggccata cgcccgacac ccatccacat ccccgccctg
29701 acccgacaca gcagtacgg tgccgtcact gcgcgggtgg tggtagatcc
29751 tgagggcacg gtgttgatca ccggggggac cgggacgctg ggtgccttgt
29801 tcgcccagca tctggtttct gcccatggtg tccggcatct gttgttgacc
29851 tcgcccgcg cgacctcagg ccacgggtgc accgatctgc agcagcggct
29901 caccgatcta ggtgctcatg tcaccatcac ggccctgcgat atcagcgacc
29951 ccgaagcact ggccgcccctg gtcaattcag tgccacaca acaccgttta
30001 acccggttag tgcacaccgc cgcggtattg gccgacacc cggtcaccga
30051 gttgaccggc gatcaactcg accaggtgct ggccccaaa atcgacggcg
30101 catggcagct gcaccaactc acctacgaac aacacctgtc tgcattcatc
30151 atgtttctcg ccatggccgg aatgataggc agtcccggtc agggtaacta
30201 cgcggcagcc aacaccgctg tagatgctct cgccgactac cgccaccgcc
30251 tgggcttgcc cgcgaccagc ctggcctggg gctactggca gactcacacc
30301 ggtctcaccg cgcatctaac cgaatgtagat ctagcccga tgaccgcct
30351 ggggtttgat cccatcgcca ccagccacgg actggccctg ttcgatgcg
30401 ccctcgccac cggacagccc gtttogatac ccgcccgat caacaccac
30451 accctggccc gacacgcccg cgacaacacc ctggccccga tcctgtctgc
30501 gctgatcacc acaccacggc gcggggcggc ctctgccga accgatctcg
30551 ctgcccgcct caacggactt agcccccaac agcaacaaca aacactggcc
30601 accctcgtgg ccgcggccac cgccaccgtg ctgggccacc acaccccgga
30651 aagcatcagc ccagccaccg cgttcaaaga cctcggaatc gattcgtga
30701 ccgcccttga actgcgcaac acctcacc ccaacaccgg cctggatctg
30751 cccccaccc tcatcttga tcacccaca cccatgcgg tggccgagca
30801 tctgcttgaa cagatccctg gcatcggtgc cctggtgccg gctcgggtg
30851 tgatcgagc tggctgtacc gaggagccgg tggcggtggg ggggatggcg
30901 tgctgtttcc ccggtggtgt cgcacagcg gatcagttgt gggacttggg
30951 gatcgctggc cgtgatgtgg tgggtaattt tccggccgat cggggttggg
31001 atgtggaggg actgtttgat cccgatccgg acgcggtcgg caaaacctac
31051 acccgttacg gcgcgttcct tgacgatgcg gcaggttttg atgccgggtt
31101 ctttgggatc tctccacggg aggcacgcgc gatggacccc cagcagcggc
31151 tgctgctgga ggtgtgctgg gaagcgctag aaaccgagg tattcccgcg
31201 cacaccttgg ccggcacctc caccggggtg ttcgcccggg cctgggcccc

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FIGURE 8(continued)

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31251 gtcctacggc gccaccaact ccgatgacgc tgagggggtat gcgatgaccg
31301 gggcgcgac tagcgatcatg tccggccgta tgcgctacac cttgggccta
31351 gaaggtccag cgatcacctg tgacaccgcc tgctcgatcat cgctgggtggc
31401 aattcacctg gcctgccaat ccttacgcaa caacgaatcc cagctagcac
31451 tggccggcgg cgtcacctg atgagcacac ctgcggtttt caccgagttc
31501 tcccgccaac gcggcctggc ccagatgga cgctgcaaag ccttcgccgc
31551 taccgccgat ggcaccggct ttggtgaagg cgccgcggtc ttggtccttg
31601 aacggctctc cgaggcccg cgcacaacc acccggtcct tgcgatcgtc
31651 gctggatcgg cgatcaacca agacggcgca tccaacggac tgaccgcacc
31701 ccacggcccg tcacaacaac gcgtcatcaa ccaagcacta gccaacgccg
31751 gcctcaccca cgaccaggct gacgcgctcg aagcccacgg caccggcacc
31801 aactgggtg acccatcgga agccagcgcc ctacacgcca cctacggcca
31851 ccaccacacg cccgatcaac cgctttggct gggatccatc aaatccaaca
31901 tcggccacac ccaagccgcc gccggcgccg ccggtgtggt caagatgac
31951 caagccatca ccaagccac cttgcccgcc accttgacg togaccaacc
32001 cagccccac atcgactggt ccagcgccac agtccgactc ctaaccgagc
32051 ccatccaatg gcccaacacc gaccacccc gcaccgcggc ggtgtcctca
32101 ttcggcatca gcggcaccaa cgcacacctc atcctccaac aacccccac
32151 ccccgacacc acacaaaccc ccaacaccac aacaggttct gatcccgag
32201 tgggttctga tcccgagtg ggtgtactgg tgtggccgtt gtcagcgct
32251 tcagcgccgg ggttaagcgc acaagcgcc cgtctgtacc agcatctcag
32301 cgccacccc gatctggatc cgatcgatgt agcccacagc ctggctacca
32351 cacgcagcca ccaccccac cgcgccacca taccaccag cattgagcac
32401 cacagcgaac acaaccacga cacaaccgat gcgctggccg cactgcacgc
32451 cctggccaac aacggcacac accccctgct gagcagaggc ctgctgaccc
32501 cacagggccc cggcaaaaca gtgttcgtgt tcccggaca gggcagtcaa
32551 taccocggca tgggcgcaga tctctaccgc caattccccg tgttcgcca
32601 cgcctcgcac gcatgcgacg cagcgttaca gcctttcact ggatggtcgg
32651 tgctagctgt gttacacgac gaaccgcagg cccgctcggt ggagcgagtc
32701 gatgtggtcc agcctgtgtt gttctcggtg atggtgtcgt tagccgcact
32751 ctggcggtgg gcgggaatca ccccgatgc agtcatcgcc cactcccagg
32801 gcgagatcgc cgcggcacat gtggccggag cctgacctt gccgaagca
32851 gctgcggtag tggctttgcg cagccgtgtc ttgaccgacc tggccggtgc
32901 cggtgccatg gcttcagtgc tatcgccga ggaaccactg acccagctgc
32951 tggcacggtg ggacggcaag atcactgtcg ccgcagttaa cggccccgt
33001 agcgtgtgtg tctccggcga taccacagcg atcaccgaat tgctgattac
33051 ctgcgaacac gaaaacatcg acgctcgcgc tatcccggtg gactaccct
33101 ctcatccccc ctatatggaa cacatccgcc atcagttcct cgacgagcta
33151 cccgagctga caccgcggcc atcaaccatc gcgatgtatt ccaccgtcga
33201 cggcgaaact cagcacaccg cctacgacac caccacaatg accgcggact
33251 actggtaccg caacatccgt aacactgtcc ggttccatga cactgtcgt
33301 gccctgctcg gggcggtgta gcaggttttc ctggaacttt cacctacccc
33351 ggtgttgaca caagcgatca ccgacaccgt cgaacaagcc ggcggcgccg
33401 ggcagcagc gccagctcta cgcaaggatc gccctgatgc tgcgcgttc
33451 gctgcagcac tcggccagct gcactgccat ggcacagcc catcctggaa
33501 tgttctttac tgccaggccc gccccctcac actgcccacc tacgctttcc
33551 agcatcagcg ttactggctg ctgcccaccg ctggtgattt cagcggggcc
33601 aataccacg ccattgcatcc gctgctagac accgcccacc aactggccga
33651 aaaccgcgga tgggtgttca ccggccggat cagcccacgc acccaaccat
33701 ggctaaacga acacgccgtc gaatcagccg tgctgttccc aggcaccgga
33751 ttctgcgagc tagcgtgca tgtcgtgac cgtgcccgat attcctcggt
33801 caacgaactg atcgtgcaca cccctctgct actcgtggc cagcacaccg
33851 cggatctaca gatcacctgc accgacaccg atgacatggg ccggcagctc
33901 cttaacatcc actcgcgccc acatatcggc catgacaaca ccaccaccg
33951 cgatgaacaa cccgagtggg tcctgcatgc cagcgcagtc ctgaccgcac
34001 aaaccaccga ccacaaccac ctcccctaa cgctgtgccc gtggcctcca
34051 cccggcacag ccgcgatcga ggtggatgac tctacgacg acctggctgc

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FIGURE 8(continued)

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34101 acagggctac aactacggcc cgacattcca aggtgtgcaa cggatatggc
34151 gtgaccacgc cacacccgat gtcattctac cggaagttga actaccggaa
34201 gacaccgaca tcgacggcta cggcatccac cccgccctat tcgacgccgc
34251 ttacacccc ctactcgccc tgacccaacc cccaccaac gacaccgatg
34301 acaaccaacac cgcagacacc ggtgaccagg tgcggctgcc ctacgccttt
34351 accggcatca gtttgacgc caccacgc ccacgattac gggtagggct
34401 gacccgtagc ggcgcgatg ccatcaccgt gcacaccagt gacaccaccg
34451 gagccccggt ggcgatcatc gactcattga tcacccgccc cctcaccacc
34501 gcoacagggc ctgctccggc aaccacagca gctggcctac tacacctgag
34551 ctggccacca caccctgaca ccacgaccga caccgacacc gacaccgatg
34601 ccctgcggtg tcaggtgatc gccgaacca ctcaacaact gccccgctac
34651 ctgcacgacc tacacaccag caccgacctg cacaccagca ccaccgaagc
34701 agacgtgggt gtgtggccgg taccggtgcc cagcaacgaa gagctccagg
34751 cacaccaagc atccgacacc gcggtgtctt ctcgataca caccctgacc
34801 cgccaaacac ttaccgtggt gcaggactgg ctactcacc ccgacaccac
34851 cggcaccoga ctggtcatcg tgacccgcca cggcgctcagc accagtggcc
34901 acgaccgggt ccccgacctg gccacgcgc cagtgtgggg cctgatccgc
34951 agcgcccaaa acgaacaccc cggacgcttc aactgtctcg acaccgacga
35001 caacaccaac agcgacaccc tcaccaccgc cctaaccctg ccaaccgcgc
35051 aaaaccaact ggccatacgc cgcgacacca tcacatccc ccgctgacc
35101 cgacacagca gtgacggtgc gctcactgc cgggtgggtg tagatcctga
35151 gggcagcgtg ttgatcccg gggggaccgg gacgtgggt gccttgctcg
35201 ccgagcatct ggtttctgcc catggtgtcc ggcattctgt gttgacctcg
35251 cggcgcgga ctcaggccca cggtgccacc gatctgcagc agcggtcac
35301 cgatctaggt gctcatgtca ccatcacggc ctgcgatatc agcgaccccg
35351 aagcactggc cgccctggtc aattcagtgc ccacacaaca ccgtttaacc
35401 gcggtagtgc acaccgccgc ggtattggcc gacaccccg taccgagtt
35451 gaccggcgat caactcgacc aggtgctggc cccaaaatc gacgcggcat
35501 ggcagctgca ccaactcacc tacgaacaca aactgtctgc attcatcatg
35551 ttctcgtcca tggccggaat gataggcagt cccggtcagg gtaactacgc
35601 ggcagccaac acccggttag atgctctcgc cgactacgc caccgcctgg
35651 cgttgcgcgc gaccagcctg gcctggggt actggcagac tcacaccggt
35701 ctaccgcgc atctaaccga tgtagatcta gcccgcatga cccgcctggg
35751 tttgatgccc atcgccacca gccacggact ggcctgttc gatgccgccc
35801 tcgccaccgg acagcccgtt tcgatacccg ccccgatcaa caccacacc
35851 ctggcccgac acgcccgcga caacaccctg gcccgatcc tgtctgcgct
35901 gatcaccaca ccacggcgcc gggcggcctc tgccgcaacc gatctcgctg
35951 cccgcctcaa cggacttagc ccccaacagc aacaacaaac actggccacc
36001 ctctggccg cggccaccgc caccgtgctg ggccaccaca ccccgaaag
36051 catcagccca gccaccgct tcaaacacct cggaatcgat tcgctgaccg
36101 cccttgaact cgcgaacacc ctacccaca acaccggcct ggatctgccc
36151 cccaccctca tcttcgatca cccacaccc catgcggtgg ccgagcatct
36201 gcttgaacag atccctggca tcggtgccct ggtgccggct ccggtggtga
36251 tcgacgtgg tcgtaccgag gagccggtgg cgggtggtgg gatggcggtg
36301 cgtttccccg gtggtgtcgc atcagcggat cagttgtggg acttgggtgat
36351 cgctggccgt gatgtggtgg gtaattttcc ggccgatcgg ggttgggatg
36401 tggagggact gtttgatccc gatccggacg cggtcggcaa aacctacacc
36451 cgttacggcg cgttccttga cgatgcggca ggttttgatg ccgggttctt
36501 tgggatctct ccacgggagg cagcgcgat ggacccocag cagcggtgc
36551 tgctggaggt gtgctgggaa gcgctagaaa ccgcggggat tcccgcgcac
36601 accttggccg gcacctcac cggggtattc gccggagcct gggccagtc
36651 ctacggcgcc accaactccg atgacgctga ggggtatgag atgaccggcg
36701 gcgcgactag cgtcatgtcc ggccgtatcg cctacacctt gggcctagaa
36751 ggtccagcga tcaccgttga caccgcctgc tcgtcatcgc tgggtggcaat
36801 tcacctggcc tgccaatcct tacgcaacaa cgaatcccag ctagcactgg

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FIGURE 8(continued)

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36851 ccggcggggt caccgtgatg agcacacctg cggttttcac cgagttctcc
36901 cgccaacgcg gcctggcccc agatggacgc tgcaaagcct tcgccgctac
36951 cgccgatggc accggccttg gtgaaggcgc cgcggtcttg gtccttgaac
37001 ggctctccga ggcccgcgcg aacaaccacc cggtccttgc gatcgtcgct
37051 ggatcggcga tcaaccaaga cggcgcatcc aacggactga ccgcacccca
37101 cggcccgctc caacaacgcg tcatcaacca agcactagcc aacgccggcc
37151 tcacccacga ccaggtcgac gccgtcgaag cccacggcac cggcaccaca
37201 ctgggtgacc ccatcgaagc cagcgcccta cagccacct acggccacca
37251 ccacacgccc gatcaaccgc tttggctggg atccatcaaa tccaacatcg
37301 gccacaccca agccgcccgc ggcgccgccc gtgtggtcaa gatgatccaa
37351 gccatcacc acgccacctt gcccgccacc ttgcacgtcg accaaccag
37401 cccccacatc gactggtcca gcggcacagt ccgactccta accgagccca
37451 tccaatggcc caacaccgac ccccccgca ccgcggcggg gtccctcattc
37501 ggcatcagcg gcaccaacgc ccacctcatc ctccaacaac cccccacccc
37551 cgacaccaca caaaccccca acaccacaac aggttctgat cccgcagtgg
37601 gttctgatcc cgcagtgggt gtactggtgt ggccgttgtc agcgcgttca
37651 gcgcgggggt taagcgcaca agcggcccggt ctgtaccagc atctcagcgc
37701 ccaccccgat ctggatccga tcgatgtagc ccacagcctg gctaccacac
37751 gcagccacca cccccaccgc gccaccatca ccaccagcat tgagcaccac
37801 agcgaanaaa accacgacac aaccgatgcg ctggccgcac tgcacgccct
37851 ggccaacaac ggcaacacac ccctgctgag cagaggcctg ctgacccac
37901 agggcccgcg caaaacagtgt ttcgtgttcc ccggacaggg cagtcaatac
37951 cccggcatgg gcgcagatct ctaccgcaa tccccgtgt tcgccacgc
38001 cctcgacgag gtcgtcgcg cgctgaaccc gcactctgat gttgcgttgc
38051 ttgaggatgat gttcagccaa caagacactg ccatggcgca actgctggac
38101 cagaccttct atgcacaacc ggcgttgttc gcgctgggaa ccgctctaca
38151 tcgattgttc acccagcgcg gtatccacc ccgactacctg ctaggccact
38201 ccacgagaga actcaccgcg gcatacgccg ccggtgtgct gtcactgcaa
38251 gacgcagcca ccttggtcac aagccgagga cgactgatgc aatcctgcac
38301 gcccgcgggg acgatgctcg cactacaagc cagcgaagca gaagtacaac
38351 cgctgcttga aggcctagac cagcccggtg ccactgcgcg gatcaacgga
38401 gcaacgtcga tcgtactgtc aggagatcac gacagcctcg aacaaatcgg
38451 cgagcacttc attacccaag atcgacgtac caccgcactg caggtcagtc
38501 acgctttcca ctctccacat atggacccca tcctcgaaca attccgccag
38551 atcgcgcccc aactcacctt cagcgcaccc accctgccca tcttgtccaa
38601 cctcaccggg cagatcgccc gccacgacca actcgcctca cctgactatt
38651 ggacccaaca gctacgtaac actgtccggt tccatgacac tgtcgtgcc
38701 ctgctcgggg cgggtgagca ggttttctct gaactttcac ctacccgggt
38751 gttgacacaa gcgatcaccg acaccgtcga acaagccggc ggccggcgcg
38801 cagcagtggc agctctacgc aaggatcgcc ctgatgctgt cgcgttcgt
38851 cgagcactcg gcagctgca ctgccatggc atcagcccat cctggaatgt
38901 tctttactgc caggcccgcc ccctcacact gcccacctac gctttccagc
38951 atcagcggtt ctggctgctg cccaccgctg gtgatttcag cggggccaat
39001 acccagccca tgcattcgct gctagacacc gccaccgaac tggccgaaaa
39051 ccgcggatgg gtgttcaccg gccggatcag cccacgcacc caaccatggc
39101 taaacgaaca cgccgtcgaa tcagccgtgc tgttccagg caccggattt
39151 gtcgagctag cgctgcatgt cgtgaccgt gccggatatt cctcggtaa
39201 cgaactgatc gtgcacacc ccctgctact cgtggccac gacaccgcgg
39251 atctacagat caccgtcacc gacaccgatg acatgggccg gcagtctctt
39301 aacatccact cgcgcccaca tatcggccat gacaacacca ccaccggcga
39351 tgaacaaccc gagtgggtcc tgcattgccag cgcagtcttg accgcacaaa
39401 ccaccgacca caaccacctc cccctaacgc ctgtgccgtg gcctccacc
39451 ggacacagcg cgtcgaggt ggatgacttc taogacgacc tggctgcaca
39501 gggctacaac tacggcccga cattccaagg tgtgcaacgg atatggcgtg
39551 accacgccac acccgatgtc atctacgccc aagttgaact acccgaagac
39601 accgacatcg acggctacgg catccacccc gccctattcg acgccgctt
39651 acaccccta ctcgcctga cccaaccccc caccaacgac accgatgaca

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FIGURE 8(continued)

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39701 ccaacaccgc agacaccggg gaccaggtgc ggctgcccta cgcctttacc
39751 ggcatacagtt tgcacgccac ccacgccacc cgattacggg tacggctgac
39801 ccgtaccggc gccgatgcc taccgtgca caccagt gac accaccggag
39851 ccccggtggc gatcatcgac tcattgatca cccgcccct caccaccgcc
39901 acagggctctg ctccggcaac cacagcagct ggctactac acctgagctg
39951 gccaccacac cctgacacca cgaccgacac cgacaccgac accgatgccc
40001 tgcggtatca ggtgatcgcc gaacccactc aacaactgcc ccgtacctg
40051 cagcacctac acaccagcac cgacctgcac accagcacca ccgaagcaga
40101 cgtggttctg tggccggtac cggcgcccag caacgaagag ctccaggcac
40151 accaagcatc cgacaccgcg gtgtcttctc ggatacacac cctgaccgcg
40201 caaacactta ccgtggtgca ggactggctc actcaccctg acaccaccgg
40251 caccgcactg gtcacgtgta cccgccacgg cgtcagcacc agtgcccacg
40301 acccggtccc cgacctagcc cagccgcag tgtggggcct gatccgcagc
40351 gcccaaacag aacaccccg acgttcaca ctgctcgaca ccgacgacaa
40401 caccaacagc gacaccctca ccaccgccct aacctgccca acccgcgaaa
40451 accaactggc catacgccgc gacaccatcc acatcccccg cctgaccoga
40501 cacagcagtg acggtgcgct cactgcgccg gtggtggtag atcctgaggg
40551 caggtgttg atcaccgggg ggaccgggac gctgggtgcc ttgttcgccg
40601 agcatctggt ttctgcccac ggtgtccggc atctgttgtt gacctcgcg
40651 cgcggacctc aggcccacgg tgccaccgat ctgcagcagc ggctcaccga
40701 tctaggtgct catgtcacca tcacggcctg cgatatcagc gaccccgaa
40751 cactggccgc cctggtcaat tcagtgccca cacaacaccg tttaaccgcg
40801 gtagtgaca ccgccgcggt attggccgac accccggtca ccgagttgac
40851 cggcgatcaa ctcgaccagg tgcggcccc caaaatcgac gcggcatggc
40901 agctgcacca actcacctac gaacacaacc tgtctgcatt catcatgttc
40951 tcgtccatgg ccggaatgat aggcagtccc ggtcagggtg actacgcggc
41001 agccaacacc gcgttagatg ctctcgccga ctaccgccac cgcctgggct
41051 tgcccgcgac cagcctggcc tggggctact ggcagactca caccggtctc
41101 accgcgcatac taaccgatgt agatctagcc cgcataccc gcctgggttt
41151 gatgcccatac gccaccagcc acggactggc cctgttcgat gccgccctcg
41201 ccaccggaca gcccgtttcg ataccgccc cgatcaaac ccacaccctg
41251 gcccgacagc cccgcgacaa caccctggcc ccgatcctgt ctgcgctgat
41301 caccacacca cggcgccggg cggcctctgc cgcaaccgat ctgctgccc
41351 gcctcaacgg acttagcccc caacagcaac aacaaact ggccaccctc
41401 gtggcccgcg ccaccgccac cgtgtgtggc caccacacc ccgaaagcat
41451 cagcccagcc accgcgttca aagacctcg aatcgattcg ctgaccgcc
41501 ttgaactgcy caacaccctc accacaaca ccggcctgga tctgcccccc
41551 accctcatct tcgatcacc caccacccat gcgctaacc aacacctgca
41601 caccgcactc acccaaagcc atacccggt cggaccaatt gcgtccctgc
41651 taagccagc gatcgatgag ggcaaattcc gtgccggcg tgacctattg
41701 atggccgcat ccaatttgaa ccaaagtctt agcaatatgg ctgaactcaa
41751 ccagctcccg gccgtgacgg acatagctga cgcgtctcct gatgggctac
41801 tcaccctgat ctgcatctct acctagaga atgagtacg tcgcctcgct
41851 gctgcgaaca ttcatctact gacctctgct gaaattgcgg cggccggtt
41901 ttacgacgcy cagctgcaa attcgataga gacgtcgga gaggcgctgg
41951 caactgccat cacaggcgcc tacgcaaata cgtccattgt tctggtagcg
42001 cactccattg tctgcgagct agctcaggca acgatgacac gtctacaaga
42051 cgctgacatc gatcttgttg gtctggttct gttggatcca ctggaaggga
42101 ctaacagcac tgaagattat gtggagacag tcttgactcg aatcgagcat
42151 atcaatgcac cgagggtcgg agtagacgg taccttgccg ccctgggccc
42201 ctatctccaa ttccacgaag accgccgaat accaataacc gaaacgcggc
42251 acatgacact gcaactcgac acgaaaattg accgtgcca aacaccaatg
42301 aacttattac aagatgaggc agcgttgacc gccctcaaaa taggaaactg
42351 gatgaacgac gtgggtgttg ccctctctgt caaccttgag tga

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FIGURE 8(continued)

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Mup045 gene

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1   gtgatttggga atgacatcta cataagtggga acggggcggtt tcatcccgtc
51  aatgcgacca ataatgata tccagggtcga cgggtgttccg aatgatcata
101 ctatcgtgca atccgattac atttccttca ccgaagccga tgagccggct
151 acagtcattg ccacgcgcgc tgcaaccgaa gcgctgacca cttccgagct
201 agtatccgct gatgttggcg tcttgatata tgccgcgatc atcggcgatg
251 cgcattcatt tgcccccgta tgtcacgtcc aaagagtcct ccgggcgccc
301 gatgcgctgg cattcgaact ttccgcagca agtaacggtg gaacacaagg
351 catcgcagtt gctgcaaadc tcatgacagc tgacgcgtcc gtgaaagctg
401 cactcgtttg tacagcttac cggcacccga tcgatattat cagccgttgg
451 tcgtcaggta tggatttcgg cgatggagca gccgcgcgcg tgctttcaag
501 agacggcgga atgggtgcgat tgatttcggy gtatcacggc tcaactgccg
551 agctagaggt tcttgctaga aatcgatcca acgaacgact tggctttgtg
601 ctgccagacg tcgggttagg aaaataccta actgctatag cgcggatgta
651 ccaagcggta attgcgcaag tactagaaga ggcacaaact agtattgccg
701 agatcgacta ttccggcctg atcggatatag gaattccaag tctcacagcg
751 actatcttag aaccacaagg tattccagtt aataaaacat cctgggggtt
801 gctaagacaa atggggccacg ttggagcttg cgatcccctg ctgagcctta
851 accacctatt cgagcagaat gtcctcaagc gcggcgacaa agtcctactc
901 ctagggtggcg ggggtgggta tcgattgaca tgcattgtgg ctgaaatcgc
951 catgaatccc ggcgtgcccg gacactccac ttcgtag

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FIGURE 9

Mup053 gene

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1   gtgaggcaga gattgaactg gattgcggcg cacgggttgc tccgcggcac
51  cgcgcggtta gcggccccgc tgggcgacgt gcagtcgcgg ctggtggcag
101 atcccattgg tatggcaaac ccggcgccat tttgcgatga attgagggca
151 atcggccctg tgggtgtcgag ctacggcacc cactcgtcgc ttagtcatgc
201 catcgcccat gaactgcttc ggtccgaaga cttcgaagtg gtctcgtcgc
251 gatcgaactt gccggcacca atgcgctggc tagagcgccg cactcgggac
301 gatacgcccc atctgctgct gccgcgctcg ttgctggccg ttgagccgcc
351 gaatcacacg cgctatcgca aggcagtgtc ctcggtgttc acgccgaaag
401 cagtagcccg attacgcgat catgtcgaag agactgcgtc ggcgctgttg
451 gatcagctca ccgaccaggc tagtgccgtc gacatcatag cccgctactg
501 ctcccagctg ccggtcgcgg tcatttgtga catcttaggc gtgccagtc
551 gagaccgaaa ccgtgttctc aagttcggtc agctggcggg gccctgcttg
601 gattttgggc tcacatggcg tcagcaccag caggtgcggc aagggtcca
651 aggactccac ttctggatca ccgagcacct cgaggaattg cgtctaacc
701 ccggtgacga tctgatgagt caaatgatcc acgcaagtga aaatggctcc
751 tcggaaacac acctccacgc aaccgaagtg cgatgatcg ggctggtgtt
801 gggcgccagt ttcgcaacaa cgatggacct gttaggcaac gggattcagg
851 tgttggttga cgcgcccga ctgcgggacg cgttgagtca gcgccgcaa
901 ctttggccca acgcggtaga agagatcctg cggttggagc caccggttca
951 gctcgccgga cgaatggctc gcaaggacac cgaggtggcg ggtaccgcaa
1001 tcaagcgggg ccagctggtg gcgatctatc tgggggcggg caaccgtgat
1051 ccgtccgtgt tcgccgatcc gcaccgcttt gacatcacac gagccaacgc
1101 caaccggcat ctgcattct cgggtggccg ccacttctgc ctcggtgccg
1151 cccttgcccc cgtcgaaggc gaagtcggat tgagaatgct cttcgagcgc
1201 ttccctgacg tgcgcgccgc agggccccga aatagacgtg atactcgaac
1251 tctcgggggt tggtcgcagc tgccggtcca gttgggcgca gcacgatcga
1301 tggctatccg atga

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FIGURE 10

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Mup038 gene

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1  atgattgttt ggcccgaagt ggtcagcaca gtggtcgacg tcgatggcgt
51  ggcgatgtcg gcactagtcg ccgaacccga tcaggagcct aaggccgtga
101 tcttagccct gcatggcggt gccaccaacg cgcggtatth cga.ctgccct
151 ggccaccgcy cgttttccct gctgcacacc ggcygcygcy cgggattcac
201 cgttgtggcc cttgaccgcy ccggctacgy cagctcggcy ggt.gatccc
251 acgcyatgaa ccggccccac cagcyggcgy cgtggccta tggggcgyt
301 gatcgcattc tggcgcagcy gccacgcggy gccggggtgt tcataatggg
351 ccattcaaac ggatgcgaac tggcgatgtg gatggccacc gagacgcgy
401 gtgccgagct gtcggcatc gagttggctg gtaccggyt gcattatcag
451 cccgaggccc gagaaatcct gacaacggy actggtgaac atcgggtggg
501 gggcctctat gatttgcctt ggcatccgca gcggctatac ccgcccagg
551 tcctcaacgc ggccatcatt tcttcgtccg ccccggccta caggagcag
601 atgatggcgy actggacccg ccgaaccttc ctggagctag tccctgctgt
651 gcgtgtgccg gtacatttca gcatcgcca acacgaaaag gtt.tggcagc
701 gcgatagttc agcgytagat gaaatcgccg tcctgttctc tggcgcgccc
751 cgtttcatcc tgcataaaca acccgaggcc ggacacaaca tcagcctggg
801 ccacaccgcy ggcgactacc acacgacagt cctgtcgttt gtc.cagcaat
851 gtctggccga acggttggcc aacgcgcaac aagatgtcga tct.cgcgccc
901 gagtga
```

FIGURE 11

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MlsA1 protein

VIFGDAHQNCRRGVRVLGDAVAVVGMSCRVPAGASDPDALWALLRDGI SVVDEIP SARWNLD
 GLVAHRLTDEQRSALRHGAFLDDVEGFDAFFGINPSEAGSMDPQQRLMLELTWAALEDA
 RIVPEHLGSSSSGVFTGAMSDDYTTAVTYRAAMTAHTFAGTHRSLIANRVSYTLGLRGPS
 LVIDTGQSSSLVAVHVAMESLRREETSLAAGGIHLNLSLAAALSAAHFGALSPDGRCYT
 FDARANGYVRGEGGGVVVLKRLNDALADGNHIYCVIRGSSVNNDGATQDLTAPGVDGQRQ
 ALLQAYERAEIDPSEVQYVELHGTGTRLGDPTEAHSLSVFGTSTVPRSPLLVGSIKTNI
 GHLEGAAGILGLIKTALAVHHRQLPPSLNYTVPNKIPLEQLGLRVQTTLSEWPDLDKPL
 TAGVSSFSMGGTNAHLILQQPPTPDTTQTPNPTTGSDPAVGSDPAVGVLVWPLSARSAPG
 LSAQAARLYQHLSAHPDLDPIDVAHSLATTRSHHPRATITTSIEHHSENNHDTTDALAA
 LHALANNGTHPLLSRGLLTPQGPVKTVFVFPQGSGQYPGMGADLYRQFPVFAHALDEVA
 ALNPHLDVALLEVMSQQDTAMAQLLDQTFYAQPALFALGTALHRLFTHAGIHPDYLLGH
 SIGELTAAYAAGVLSLQDAATLVTSRGRMQSCTPGGTMLALQASEAEVQPLLEGLDHAV
 SIAAINGATSIVLSGDHDSLEQIGEHFITQDRRTTRLQVSHAFHSPHMDPILEQFRQIAA
 QLTFSAPTLPILSNLTGQIARHDQLASPDYWTQQLRNTVRFHDTVAALLGAGEQVFLELS
 PHPVLTOAITDTVEQAGGGGAAPALRKDRPDVAFAAALGQLHCHGISPSWNVLYCQAR
 PLTLPTYAFQHORYWLLPTAGDFSGANTHAMHPLLDTATELAENRGWVFTGRISPRTQPW
 LNEHAVESAVLFPNTGFVELALHVADRAGYSSVNELIVHTPLLLAGHDTADLQITVTDTD
 DMGRQSLNIHSHPHIGHDNTTTGDEQPEWVLHASAVLTAQTTDHNLPLTPVPWPPPGTA
 AIEVDFFYDDLAAQGYNYGPTFQGVQRIWRDHATPDVIYAEVELPEDTDDIDGYGIHPALF
 DAALHPLLALTQPPNTDDTNTADTGDQVRLPYAFTGISLHATHATRLRVRLTRTGADA
 ITVHTSDTTGAPVAIIDSLITRPLTTATGSAPATTAAGLLHLSWPPHPDTTTTDTDTD
 LRYQVIAEPTQQLPRYLHDLHTSTDHSTTEADVVPVPSNEELQAHQASDTAVSS
 RIHTLTRQTLTVVQDWLTHPDTTGTRLVIVTRHGVSTSAHDPVPDLAHAAVWGLIRSAQN
 EHPGRFTLLDNTNSDTLTALTLPPTRENQLAIRRDTIHIPRLTRHSSDGALTAPVVV
 DPEGTVLITGGTGTGLGALFAEHLVSAHGVRHLLLTSSRRGPQAHGATDLQQLRDLGAHVT
 ITACDISDPEALALVNSVPTQHRLTAVVHTAAVLADTPVTELTGDQLDQVLAPKIDAAW
 QLHQLTYEHNLSAFIMFSSMAGMIGSPGQGNYYAANTALDALADYRHRLGLPATSLAWGY
 WQHTHTGLTAHLTDVLDIARMTRLGLMPIATSHGLALFDAALATGQPVSIAPAPINTHTLARH
 ARDNTLAPILSALITTPRRRAASAATDLAARLNLSPQQQQQTLATLVAAATATVLGHHT
 PESISPATAFKDLGIDSLTALRLNTLTHTGNLSSTLIFDHPTPHAVAHEHLEQIPGI
 GALVPAPVVIAAGRTEEPVAVVGMACRFPGGVASADQLWDLVIAGRDRVGNFPADRGWDV
 EGLFDPDPDAVAGKTYTRYGAFLDDAAGFDAGFFGISPREARAMDPQORLLLEVCWEALET
 AGIPAHTLAGTSTGVFVGAWAQSYGATNSDDAEGYAMTGGATSVMSGRIAYTLGLEGPAT
 TVDTACSSSLVAIHLACQSLRNNEQLALAGGVTVMSTPAVFTDFSRQRLAPDGRCKAF
 AATADGTGWGEGAVALVLERLSEARRNNHPVLAIVAGSAINQDGASNGLTAPHGPSQQRV
 INQALANAGLTHDQVDAVEAHGTGTLGDPPIEAGALHATYGHHTPDQPLWLGSIKSNIG
 HTQAAAGAAGVVKMIQAITHATLTPATLHVDQPSPHIDWSSGTVRLLTEPIQWPNTDHPRT
 AAVSSFGISGTNAHLILQQPPTPDTTQTPNPTTGSDPAVGSDSAVGSDPAVGVLVWPLSA
 RSAPGLSAQAARLYQHLSAHPDLDPIDVAHSLATTRSHHPRATITTSIEHHSENNHDTT
 DALAALHALANNGTHPLLSRGLLTPQGPVKTVFVFPQGSGQYPGMGADLYRQFPVFAHAL
 DEVAALNPHLDVALLEVMSQQDTAMAQLLDQTFYAQPALFALGTALHRLFTHAGIHPD
 YLLGHSIGELTAAYAAGVLSLQDAATLVTSRGRMQSCTPGGTMLALQASEAEVQPLLEG
 LDHAVSIAAINGATSIVLSGDHDSLEQIGEHFITQDRRTTRLQVSHAFHSPHMDPILEQF
 RQIAAQLTFSAPTLPILSNLTGQIARHDQLASPDYWTQQLRNTVRFHDTVAALLGAGEQV
 FLELSPHPVLTOAITDTVEQAGGGGAAPALRKDRPDVAFAAALGQLHCHGISPSWNVLY
 CQARPLTLPTYAFQHORYWLLPTAGDFSGANTHAMHPLLDTATELAENRGWVFTGRISP
 RTQPDWLNHAVESAVLFPNTGFVELALHVADRAGYSSVNELIVHTPLLLAGHDTADLQIT
 VTDTDMDGRQSLNIHSRPHIGHDNTTTGDEQPEWVLHASAVLTAQTTDHNLPLTPVPWP
 PPGTAIEVDFFYDDLAAQGYNYGPTFQGVQRIWRDHATPDVIYAEVELPEDTDDIDGYGI
 HPALFDAALHPLLALTQPPNTDDTNTADTGDQVRLPYAFTGISLHATHATRLRVRLTR
 TGADAITVHTSDTTGAPVAIIDSLITRPLTTATGSAPATTAAGLLHLSWPPHPDTTTTD
 TDTDALRYQVIAEPTQQLPRYLHDLHTSTDHSTTEADVVPVPSNEELQAHQASD
 TAVSSRIHTLTRQTLTVVQDWLTHPDTTGTRLVIVTRHGVSTSAHDPVPDLAHAAVWGLI
 RSAQNEHPGRFTLLDNTNSDTLTALTLPPTRENQLAIRRDTIHIPRLTRHSSDGALT
 APVVVDPEGTVLITGGTGTGLGALFAEHLVSAHGVRHLLLTSSRRGPQAHGATDLQQLRDL

FIGURE 12

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GAHVTTITACDISDPEALAAALVNSVPTQHRLTAVVHTAAVLADTPVTELTGDQLDQVLAPK
IDAAWQLHQLTYEHNLSAFIMFSSMAGMIGSPGQGNAAAANTALDALADYRHRGLPLATS
LAWGYWQHTHTGLTAHLTDVDLARMTRLGLMPIATSHGLALFDAALATGQPVSI PAPINTH
TLARHARDNTLAPILSALITTPRRRAASAATDLAARLNGLSPPQQQQQTLATLVAAATATV
LGHHTPESISPATAFKDLGIDSLTALELRNTLTHNTGLNLSSTLIFDHPTPHAVAEHLLE
QIPGIGALVPAPVVIAAGRTEEPVAVVGMACRFPGGVASADQLWDLVIAGRVDVVGNFAD
RGWDVEGLFDPDPDAVGKTYTRYGAFLDDAAGFDAGFFGISPREARAMDPQQRLLLEVVCW
EALETAGIPAHTLAGTSTGVFVGAGAQSYGATNSDDAEGYAMTGGATSVMSGRIAYTLGL
EGPAITVDTACSSSLVAIHLACQSLRNNESSLALAGGVTVMSTPAIFTEFSRQRGLAPDG
RCKAFAATADGTGWGEGA AVLVLRLSEARRNNHPVLAI VAGSAINQDGASNGLTAPHGP
SQQRVINQALANAGLTHDQVDAVEAHGTGTTLGDPFIEAGALHATYGHHTPDQPLWLGSI
KSNIGHTQAAAGAAGVVKMIQAITHATLTPATLHVDQPSPHIDWSSGTVRLLTEPIQWPNT
DHPRTAAVSSFGISGTNAHLILQQPPTPDTTQTPNPTTGSDPAVGSDSAVGSDPAVGVLV
WPLSARSAPGLSAQAARLYQHLSAHPDLDPIDVAHSLATTRSHHPHRATITTSIEHHSN
NHDTTDALAALHALANNGTHPLLSRGLLTPOGPGKTVFVFPQGGSQYPGMGADLYRQFPV
FAHALDACDAALQFFTGWSVLAVLHDEPEAPSLERVDVVPVLFVSMVSLAALWRWAGIT
PDAVIGHSQGEIAAAHVAGALTPEAAAVVALRSRVLTDLAGAGAMASVLSPEEPLTQLL
ARWDGKITVA AVNGPASAVVSGDTTAITELLITCEHENIDARAI PVDYPSHSPYMEHIRH
QFLDELPELTPRPSTIAMYSTVDGEPHDTAYDTTMTADYWRNIRNTVRFHDTVAALLG
AGEQVFLFELSPHPVLTQAITDTVEQAGGGGA AVPALRKDRPD AVAFAAALGQLHCHGISP
SWNVLYCQARPLTLPTYAFQHQRYLWLLPTAGDFSGANTHAMHPLLDTATELAENRGWVFT
GRISPRTPQWLNEHAVESAVLFPGTG FVELALHVADRAGYSSVNELIVHTPLLLAGHDTA
DLQITVTDTDMMGRQSLNIHSRPHIGHDNTTTGDEQPEWVLHASAVLTAQTTDHNHPLT
PVPWPPPGTAAIEVDFFYDDLAAQGYNYGPTFQGVQRIWRDHATPDVIYAEVELPEDTDI
DGYGIHPALFDAALHPLLALTQPPNTDDTNTADTGDQVRLPYAFTGISLHATHATRLR
VRLTRTGADAITVHTSDTTGAPVAIIDSLITRPLTTATGSAPATTAAGLLHLSWPPHPDT
TTDTDTDTDALRYQVIAEPTQQLPRYLHDLHTSTDLHTSTTEADVVPVVPV SNEELQA
HQASDTAVSSRIHTLRTQTLTVVQDWLTHPDTTGTRLVIVTRHGVSTSAHPV PDLAHAA
VWGLIRSAQNEHPGRFTLLDNTNSDTLTALTPTRENQLAIRRDTIHIPRLTRTAV
LTPPDSSGPWRLLDTTGKGDLANLALLPTAHTALASGQIRIDVRAAGLNFHDVVVALGLIPD
DGFGGEAAGVISEIGPDVYGFAVGDAVTGMTVSGAFAPSTVADHRMVMITIPARWSFPQAA
SIPVVF LTAYIALAEISGLSRGQRVLIHAGTG GVGMAAIQLAHLGA EVFATA SAAKWST
LEALGVPRDHIASSRTLDFSNAFLDATNGAGVDVVLNCLSGEFVEASLALLPRGGHFVEI
GKTDIRDTEVIAATHPGVIYRALDLSVSPDHIQRTLAQLSPLFATDTLKLPLTTNYSIY
QAISALRDMSQARHTGKIVLTAPVVVDPEGTVLITGGTGTLGALFAEHLVSAHGVRHLLL
TSRRGPQAHGATDLQQLTDLGAHVTTITACDISDPEALAAALVNSVPTQHRLTAVVHTAVV
LADTPVTELTGDQLDQVLAPKIDAAWQLHQLTYEHNLSAFIMFSSMAGMIGSPGLGNAAA
ANTALDALADYRHRGLPLATSLAWGYWQTRTGLTAHLTDVDLARMTRLGLMPIATSHGLA
LFDAAALATGQPVSI PAPINTHTLARHARDNTLAPILSALITTPRRRAASAATDLAARLNG
LSPQQQQQTLATLVAAATATV LGHHTPESISPATAFKDLGIDSLTALELRNTLTHNTGLN
LSSTLIFDHPTPHAVAEHLLEQIPGIGALVPAPVVIAAGRTEEPVAVVGMACRFPGGVAS
ADQLWDLVIAGRVDVVGNFADRGWDVEGLFDPDPDAVGKTYTRYGAFLDDAAGFDAGFFG
ISPREARAMDPQQRLLLEVVCWEALETAGIPAHTLAGTSTGVFVGAGAQSYGATNSDGAEG
YAMTGGAISVMSGRIAYTLGLEGPATVDTACSSSLVAIHLACQSLRNNESSLALAGGVTV
VMSTPAIFTEFSRQRGLAPDGRCKAFAATADGTGFGEGA AVLVLRLSEARRNNHPVLAI
VAGSAINQDGASNGLTAPHGPSQQRVINQALANAGLTHDQVDAVEAHGTGTTLGDPFIEAS
ALHATYGHHTPDQPLWLGSIKSNIGHTQAAAGAAGVVKMIQAITHATLTPATLHVDQPS
HIDWSSGTVRLLTEPIQWPNTDHPRTAAVSSFGISGTNAHLILQQPPTPDTTQTPNPTTG
SDPAVGSDSAVGSDPAVGVLVWPLSARSAPGLSAQAARLYQHLSAHPDLDPIDVAHSLAT
TRSHHPHRATITTSIEHHSN NHDTTDALAALHALANNGTHPLLSRGLLTPOGPGKTVFV
FPGQGSQYPGMGADLYRQFPVFAHALDACDAALQFFTGWSVLAVLHDEPEAPSLERVDV
QPVLFVSMVSLAALWRWAGITPDAVIGHSQGEIAAAHVAGALTPEAAAVVALRSRVLT
DLAGAGAMASVLSPEEPLTQLLARWDGKITVA AVNGPASAVVSGDTTAITELLITCEHENI
DARAI PVDYPSHSPYMEHIRHQFLDELPELTPRPSTIAMYSTVDGEPHDTAYDTTMTAD
YWRNIRNTVRFHDTVAALLGAGEQVFLFELSPHPVLTQAITDTVEQAGGGGA AVPALRKD
RPDAVAFAAALGQLHCHGISPSWNVLYCQARPLTLPTYAFQHQRYLWLLPTAGDFSGANTH

FIGURE 12(continued)

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AMHPLLDLTATELAENRGWVFTGRISPRTQPWLNEHAVESAVLFPGTGFVELALHVA DRAG
 YSSVNELIVHTPLLLAGHDTADLQITVTD TDDMGRQSLNIHSRPHIGHDNTTTGDEQPEW
 VLHASAVLTAQTTHDNHPLTPVPWPPPGTAAIEVDDFYDDLAAQGYNYGPTFQGVQRIW
 RDHATPDVIAEVELPEDTDIDGYGIHPALFDAALHPLLALTQPPTNDTDDTNTADTGDQ
 VRLPYAFTGISLHATHATRLRVRLTRTGADAITVHTSDTTGAPVAIIDSLITRPLTTATG
 SAPATTAAGLLHLSWPPHPDTTTTDDTDTDALRYRVIAEPTQQLPRYLHDLHTSTDLHTS
 TTEADVVPVVPVPSNEELQAHQASDTAVSSRIHTLTRQTLTVVQDWLTHPDTTGTRLVI
 VTRHGVSTSAHDPVPDLAHA AVWGLIRSAQNEHPGRFTLLD TDDNTNSDTLTALTLPTR
 ENQLAIRRDTIHIPRLTRHSSDGALTAPVVVDPEGTVLITGGTGTGLGALFAEHLVSAHGV
 RHLLLTSSRRGPQAHGATDLQORLTDLGAHVTTITACDISDPEALAAALVNSVPTQHRLTAVV
 HTAAVLADTPVTELTGDQLDQVLAPKIDAAWQLHQLTYEHNLSAFIMFSSMAGMIGSPGQ
 GNYAAANTALDALADYRHLGLPATSLAWGYWQHTGTLTAHLTDVDLARMTRLGLMPIAT
 SHGLALFDAALATGQPVSI PAPINTHTLARHARDNTLAPILSALITTPRRRAASAATDLA
 ARLNGLSPQQQQQTLATLVAAATATVLGHHTPESISPATAFKDLGIDSLTALELRNTLTH
 NTGLDLPPTLIFDHPTPTALTQHLHTRLTGALVPAPVVI AAGRTEEPVAVVGMACRFPG
 GVASADQLWDLVIAGR DVGNFPADRGWDVEGLFDPDPDAVGKTYTRYGAFLDDAAGFDA
 GFFGISPREARAMDPQORLLLEVCWEALETAGIPAHTLAGTSTGVFVGAWAQS YGATNSD
 DAEGYAMTGGAISVMSGRIAYTLGLEGPAITVDTACSSSLVAIHLACQSLRNNESQLALA
 GGVTVMSTPAVFTEFSRQRLAPDGRCKAFAATADGTGFGEGA AVLVLERLSEARRNNHP
 VLAIVAGSAINQDGASNGLTAPHGPSQQRVINQALANAGLTHDQVDAVEAHGTGTTLGDP
 IEAGALHATYGHHTPDQPLWLGSIKSNIGHTQAAAGAAGVVKMIQAI THATLPATLHVD
 QPSPHIDWSSGTVRLLTEPIQWPNTDHPRTAAVSSFGISGTNAHLILQQPPTPDTTQTPN
 TTTGSDPAVGSDPAVGVLVWFLSARSAPGLSAQAARLYQHLSAHPDLDPIDVAHSLATTR
 SHHPHRTAITTTSIEHHSENNHD TTDALAALHALANNGTHPLLSRGLLTPQGPVKTVFVFP
 GQGSQYPGMGADLYRQFPVFAHALDACDAALQPTGWSVLAVLHDEPEAPSLERVDVQVP
 VLF SVMVSLAALWRWAGITPDAVIGHSQGEIAAAHVAGALTPEAAAVVALRSRVLTDLA
 GAGAMASVLSPEEPLTQLLARWDGKITVA AVNGPASAVVSGDTTAITELLITCEHENIDA
 RAI PVDYPSHSPYMEHIRHQFLDELPELTTPRPSTIAMYSTVDGEPHDTAYDTTMTADYW
 YRNIRNTVRFHDTVAALLGAGEQVFLELSPHPVLTAITD TVEQAGGGGA AVPALRKDRP
 DAVAFAAALGQLHCHGISPSWNVLYCQARPLTLPTYAFQHQRWLLPTAGDFSGANTHAM
 HPLLDLTATELAENRGWVFTGRISPRTQPWLNEHAVESAVLFPGTGFVELALHVA DRAGYS
 SVNELIVHTPLLLAGHDTADLQITVTD TDDMGRQSLNIHSHPHIGHDNTTTGDEQPEWVL
 HASAVLTAQTTHDNHPLTPVPWPPPGTAAIEVDDFYDDLAAQGYNYGPTFQGVQRIWRD
 HATPDVIAEVELPEDTDIDGYGIHPALFDAALHPLLALTQPPTNDTDDTNTADTGDQVR
 LPYAFTGISLHATHATRLRVRLTRTGADAITVHTSDTTGAPVAIIDSLITRPLTTATGSA
 PATTAAGLLHLSWPPHPDTTTTDDTDTDALRYQVIAEPTQQLPRYLHDLHTSTDLHTSTT
 EADVVPVVPVPSNEELQAHQASDTAVSSRIHTLTRQTLTVVQDWLTHPDTTGTRLVIVT
 RHGVSTSAHDPVPDLAHA AVWGLIRSAQNEHPGRFTLLD TDDNTNSDTLTALTLPTR
 ENQLAIRRDTIHIPRLTRTAVLTPPDSGPWRDLTTGKGDLANLALLPTAHTALASGQIRIDV
 RAAGLNFDHVVALGLIPDDGFGGEAAGVISEIGPDVYGFVGDVAVTGMTVSGAFAPSTV
 ADHRMVTIPARWSFPQAASIPVVF LTAYIALAEISGLSRGQRVLIHAGTGGVGMAAIQL
 AHHLGAEVFATASAAKWSTLEALGVPRDHIASSRTLDFSNAFLDATNGAGVDVVLNCLSG
 EFVEASLALLPRGGHFVEIGKTDIRDTEVIAATHPGVIYRALDLSVSPDHIQRTLAQLS
 PLFATDTLKPLPTTNYSIYQAI SALRDMSQARHTGKIVLTAPVVVDPEGTVLITGGTGTGL
 GALFAEHLVSAHGVRLHLLTSRRGPQAHGATDLQORLTDLGAHVTTITACDISDPEALAAAL
 VNSVPTQHRLTAVVHTAAVLADTPVTELTGDQLDQVLAPKIDAAWQLHQLTYEHNLSAFI
 MFSSMAGMIGSPGQGN YAAANTALDALADYRHLGLPATSLAWGYWQHTGTLTAHLTDVD
 LARMTRLGLMPIATSHGLALFDAALATGQPVSI PAPINTHTLARHARDNTLAPILSALIT
 TPRRAASAATDLAARL NGLSPQQQQQTLATLVAAATATVLGHHTPESISPATAFKDLGI
 DSLTALELRNTLTHNTGLNLSSTLIFDHPTPHAVA EHLLEQIPGIGALVPAPVVI AAGR
 TEPPVAVVGMACRFPGGVASADQLWDLVIAGR DVGNFPADRGWDVEGLFDPDPDAVGKTY
 TRYGAFLDDAAGFDAGFFGISPREARAMDPQORLLLEVCWEALETAGIPAHTLAGTSTGV
 FVGAGAQS YGATNSDDAEGYAMTGGATSVMSGRIAYTLGLEGPAITVDTACSSSLVAIHL
 ACQSLRNNESQLALAGGVTVMSTPAVFTEFSRQRLAPDGRCKAFAATADGTGFGEGA AV
 LVLERLSEARRNNHPVLAIVAGSAINQDGASNGLTAPHGPSQQRVINQALANAGLTHDQV
 DAVEAHGTGTTLGDP IEAGALHATYGHHTPDQPLWLGSIKSNIGHTQAAAGAAGVVKMI
 QAI THATLPATLHVDQPSPHIDWSSGTVRLLTEPIQWPNTDHPRTAAVSSFGISGTNAHL

FIGURE 12(continued)

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ILQQPPTPNPTQTPEDCSPAQSPCATITDAGTGLSFVPWVISAKSAEALSAQASRLLTRI
 DDDPVVDAIDLGWSLIATRSMFEHRAVVVGADRHQLQRGLAELASGNLGADVVGRRARA
 GETVMVFPFGQGSQRLGMAQLYEQFPVFAAAFDDVVDALDQYLRLPLRQVMWGDDEGLLN
 STEFAQPSLFAVEVALFALLRFWGVVPDYVIGHSVGELAAQVAGVLSLQDAAKLVSARG
 RLMQALPAGGAMVAVAAASQHEVEPLLVEGVDIAALNAPGSVVISGDQAAVRLIANRLADR
 GYRAHELAVSHAFHSSLMLEEFARLASEIVVEQPQIPLISNVTGQLANADYGSAGYW
 VDHIRRPVRFADSVASLEAMGASCIEVGPASGLGAAIEQSLKSAEPTVSVSALSTDKPE
 SVAVLRAAARLSTSGIPVDWQSVFDGRSTQTVNLPTYAFQQRQFWDANRIGQGDPAQSP
 QAQNVESRFWEAVEREDVDGLADSIGVTASAMQTVLPALSSWRRRAERTQSELD SWRYQVT
 WLSPPATPSSITLSGIWLLIVPSELAKTDPVIGCAAALAEHAGALVTIITI FEPDFNRS LM
 GASLKDIGSHISGVISFLGIHGSEFSDSGAVKTLNLVQAMGDVHLDVPLWCLTQGA VSI S
 ADDLIRCSSAALVWGLGRVVALEHPGSWGG LVDLPESPDDAAWERLCALLAQPTDEDQFA
 IRPSGVFLRRLIHAPATTTSKSSSTAWAPRGTVLITGGTGALGAHVARWLAHKYESVDLLL
 TSRRGMAADGATELVDDLRTAGASVTVHACDVTDRTSVEAAIAGKSLDAVFHLAGRHQPT
 LLTELEDESFDELAPKVHGAQVLSDITSNLTLSAFVMFSSVAGIWWGKSQGAYAAANAF
 LDSLAEKRRRTLGLPATSVAWGLWAGGMDRPSASGLNLI GLKMSADLAVQALS DAIDR
 PQATLTVASVNWDRFYPTFALARPRPFLHEITEVMAYRESMRSSSASTATLLTSKLAGLT
 ATEQRAVTRKLVLDQAASVLGYASTESLDTHESEFKDLGFDLSLTALELRDHLQTATGLNLS
 STLIFDHPTPHAVAHEHLEQIPGIGALVPAPVVAAGRTEEPVAVVGMACRFPGGVASAD
 QLWDLVIAGR DVGNFPADRGWDVEGLFDPDPDAVGKTYTRYGAFLDDAAGFDAGFFGIS
 PREARAMDPQORLLLEVCEWAELETAGIPAHTLAGTSTGVFAGAWAQSYGATNSDDAEGYA
 MTGGSTSVMSGRIAYTLGLEGPAITVDTACSSSLVAIHLACQSLRNNE SQLALAGGVTVM
 STPAIFTEFSRQRGLAPDGRCKAFAATADGTGFGEGA AVLVLERLSEARRNNHPVLAIVA
 GSAINQDGASNGLTAPHGPSQQRVINQALANAGLTHDQVDAVEAHGTGTTLGDP IEASAL
 HATYGHHTPDQPLWLGSIKSNIGHTQAAAGAAGVVKMIQAI THATLPATLHVDQPSPHI
 DWSSGTVRLLTEPIQWPNTDHPRTAAVSSFGISGTNAHLILQQPPTPDTTQTPNTTTGSD
 PAVGSDPAVGVLVWPLSARSAPGLSAQAARLYQHLSAHPDLDPIDVAHSLATTRSHHPHR
 ATITTSIEHHSENNHDTTDALAALHALANNGTHPLLSRGLLT PQGPGKTVFVFPFGQGSQY
 PGMGADLYRQFPVFAHALDACDAALQPFTGWSVLAVLHDEPEAPSLERVDVVQPVLF SVM
 VSLAALWRWAGITPDAVIGHSQGEIAAAHVAGALTLPEAAAVVALRSRVLTDLAGAGAMA
 SVLSPEEPLTQLLARWDGKITVAAVNGPASAVVSGDTTATTELLITCEHENIDARAI PVD
 YPSHSPYMEHIRHQFLDELPELTPRPSTIAMYSTVDGEPHDTAYDTTMTADYWRNIRN
 TVRFHDTVAALLGAGEQVFEELSHPVLTQAITD TVEQAGGGGA AVPALRKDRPD AVAFA
 AALGQLHCHGISPSNVLYCQARPLTLPT YAFQHQRXWLLPTAGDFSGANTHAMHPLLD T
 ATELAENRGWVFTGRISPRTPQWLNEHAVESAVLFPGTGFVELALHVADRAGYSSVNELI
 VHTPLLLAGHDTADLQITVTD TDDMGRQSLNIHSHPHIGHDNTTTGDEQPEWVLHASAVL
 TAQTTDHNLPLTPVPWPPPGTAAIEVDDFYDDLAAQGYNYGPTFQGVQRIWRDHATPDV
 IYAEVELPEDTDIDGYGIHPALFDAALHPLLALTQPPTNDTDDTNTADTG DQVRLPYAFT
 GISLHATHATRLRVRLTRTGADAITVHTSDTTGAPVAI IDSLITRPLTTATGSAPATTAA
 GLLHLSWPPHPD TTTDTDTDTDALRYQVIAEPTQQLPRYLHDLHTSTTEADV VVWVPVFP
 SNEELQAHQASDTAVSSRIHTLTRQTLTVVQDWLTHPDTTGTRLVIVTRHGVSTSAHDPV
 PDLAHA AVWGLIRSAQNEHPGRFTLLD TDDNTNSDTLTALTLP TRENQLAIRRDTIHIP
 RLTRHSSDGALTAPVVVDPEGTVLITGGTGTLGALFAEHLVSAHGVRHLLLT SRRGPQAH
 GATDLQORLTDLGAHVITACDISDPEALAALVNSVPTQHRLTAVVHTAAVLADTPVTEL
 TGDQLDQVLAPKIDAAWQLHQLTYEHNLSAFIMFSSMAGMIGSPGQGN YAAANTALDALA
 DYRHLGLPATSLAWGYWQTHGTGLTAHLTDVDLARMTRLGLMPIATSHGLALFDAALATG
 QPVSIPAPINTHTLARHARDNTLAPILSALITTPRRRAASAATDLAARLNGLSPQQQQQT
 LATLVAAATATVLGHHTPESISPATAFKDLGIDSLTALELRNTLTHTGLDLPPTLI FDH
 PTPHAVAHEHLEQIPGIGALVPAPVVAAGRTEEPVAVVGMACRFPGGVASADQLWDLVI
 AGRDVVGNFPADRGWDVEGLFDPDPDAVGKTYTRYGAFLDDAAGFDAGFFGISPREARAM
 DPQORLLLEVCEWAELETAGIPAHTLAGTSTGVFAGAWAQSYGATNSDDAEGYAMTGGSTS
 VMSGRIAYTLGLEGPAITVDTACSSSLVAIHLACQSLRNNE SQLALAGGVTVMSTPAVFT
 EFSRQRGLAPDGRCKAFAATADGTGFGEGA AVLVLERLSEARRNNHPVLAIVAGSAINQD
 GASNGLTAPHGPSQQRVINQALANAGLTHDQVDAVEAHGTGTTLGDP IEASALHATYGHH
 HTPDQPLWLGSIKSNIGHTQAAAGAAGVVKMIQAI THATLPATLHVDQPSPHI DWSSGTV
 RLLTEPIQWPNTDHPRTAAVSSFGISGTNAHLILQQPPTPDTTQTPNTTTGSDPAVGSDP
 AVGVVLWPLSARSAPGLSAQAARLYQHLSAHPDLDPIDVAHSLATTRSHHPHRATITTSI

FIGURE 12(continued)

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EHHSENNHDTTDLAALHALANNGTHPLLSRGLLTPOGPGKTVFVFPQGSQYPGMGADL
 YRQFPVFAHALDACDAALQPF TGWSVLAVLHDEPEAPSLERV DVVQPVLF SVMVSLAALW
 RWAGITPDAVIGHSQGEIAAAHVAGALTLEAAAVALRSRVLTDLAGAGAMASVLSPEE
 PLTQLLARWDGKITVAAVNGPASAVVSGDTTATITELLITCEHENIDARAI PVDYPSHSPY
 MEHIRHQFLDELPELT PRPSTIAMYSTVDGEPHTAYDTTMTADYWYRNIRNTVRFHDT
 VAALLGAGEQVFLLELSPHPVLTQAITDTVEQAGGGGAAPALRKDRPDAVAFAAALGQLH
 CHGISPSWNVLYCQARPLTLPTAFQHORYWLLPTAGDFSGANTHAMHPLLDTATELAEN
 RGWVFTGRISPRTQPWLNEHAVESAVLFPGTGFVELALHVADRAGYSSVNELIVHTPLLL
 AGHDTADLQITVTD TDDMGRQSLNIHSRPHIGHDNTTTGDEQPEWVLHASAVLTAQT TDH
 NHLPLTPVPWPPPGTAAIEVDDFYDDLAAQGYNYGPTFQGVQRIWRDHATPDVIYAEVEL
 PEDTDIDGYGIHPALFDAALHPLLALTQPPTNDTDDTNTADTGQVRLPYAFTGISLHAT
 HATRLRVRLTRTGADAITVHTSDTTGAPVAIIDSLITRPLTTATGSAPATTAAGLLHLSW
 PPHPD TTTDTDTDLALRYQVIAEPTQQLPRYLHDLHTSTDLHTSTTEADV VVWPVPVPS
 NEELQAHQASDTAVSSRIHTLTRQTLTVVQDWLTHPD TTGTRLVIVTRHGVSTSAHDPVP
 DLAAHA VWGLIRSAQNEHPGRFTLLD TDDNTNSDTLTALTLP TRENQLAIRRDTIHIPR
 LTRTAVLT PPD SG PWRLDTTGKGD LANLALLPTAHTALASGQIRIDVRAAGLNFDHVVA
 LGLIPDDGFGGEAAGVISEIGPDVYGFVAGDAVTGMTVSGAFAPSTVADHRMVM TIPARW
 SFPQAASIPVVF LTAYIALAEISGLSRGQRVLIHAGTGGVGMAAIQLAHLGAEVFATAS
 AAKWSTLEALGVPRDHIASSRTLD FSNAFLDATNGAGVDVVLNCLSGEFVEASLALLPRG
 GHFVEIGKTDIRDTEVIAATHPGVIYRALDLSVSPDHIQRTLAQLSPLFATDTLKLPLT
 TNYSIYQ AISALRDM SQARHTGKIVLTAPVVVDPEGTVLITGGTGT LGALFAEHLVSAHG
 VRHLLTSRRGPQAHGATDLQQR L TDLGAHVTTITACDISDPEALAA LVNSVPTQHRLTAV
 VHTAAVLADTPVTELTGDQLDQVLAPKIDAAWQLHQLT YEHNLSAFIMFSSMAGMIGSPG
 QGNYAAANTALDALADYRHRGLPATSLAWGYWQTRTGVT AHLTDVDLARMTRLGIMPIA
 TSHGLALFDAALATGQPVSI PAPINTHTLARHARDNTLTPILSALITTPRRRAASAATDL
 AARLNGLSPOQQQQTLATLVAAATATVLGHHTPESISPATAFKDLGIDSLTALELRNTLT
 HNTGLDLPPTLIFDHPTALTQHLHTRLT TGALVPAPV VIAAGRTEEPVAVVGMACRF
 GGVASADQLWDLVIAGR DVGNFPADRGWDVAGLFDPDPDAVGKTYTRYGAFLDDAAGFD
 AGFFGISPREARAMDPQORLLLEV CWEALETAGIPAHTLAGTSTGVFVGAGAQSYGATNS
 DDAEGYAMTGG AISVMSGRIAYTLGLEGPATVDTACSSSLVAIHLACQSLRNNESQLAL
 AGGVTVMTSTPAVTFDFSRQRLAPDGRCKAFAATADGTGFGEAAVLVLERLSEARRNNH
 PVLAI VAGSAINQDGASNGLTAPHGPSQQRVINQALANAGLTHDQVDAVEAHGTGTTLGD
 PIEAGALHATYGHHTPDQPLWLGSIKSNIGHTQAAAGAAGVVKMIQAITHATL PATLHV
 DQPSPHIDWSSGTVRLLTPEPIQWPNTDHPRTAAVSSFGISGTNAHLILQQPPTPDTTQTP
 NP TTGSDPAVGSDSAVGSDPAVGVLVWPLSARSAPGLSAQAARLYQHLSAHPDLDPIDVA
 HSLATTRSHHPH RATITTSIEHSENNHDTTDLAALHALANNGTHPLLSRGLLTPOGPG
 KTVFVFPQGSQYPGMGADLYRQFPVFAHALDEVAALNPHLDVALLEV MFSSQQDTAMAQ
 LLDQTFYAPALFALGTALHRLFTHAGIHPDYLLGHSIGELTAAYAAGVLSLQDAATLVT
 SRGRMQSCTPGGTMLALQASEAEVQPLLEGLDHAVSIAAINGATSIVLSGDHDSLEQIG
 EHFITQDRRTRLQVSHAFHSPHMDPILEQFRQIAAQLTFSAPTLPILSNLTGQIARHDQ
 LASPDYWTQQLRNTVRFHDTVAALLGAGEQVFLLELSPHPVLTQAITDTVEQAGGGGAAP
 ALRKDRPDAVAFAAALGQLHCHGISPSWNVLYCQARPLTLPTAFQHORYWLLPTAGDFS
 GANTHAMHPLLDTATELAENRGWVFTGRISPRTQPWLNEHAVESAVLFPNTGFVELALHV
 ADRAGYSSVNELIVHTPLLLAGHDTADLQITVTD TDDMGRQSLNIHSRPHIGHDNTTTGD
 EQPEWVLHASAVLTAQT TDHNLPLTPVPWPPPGTAAIEVDDFYDDLAAQGYNYGPTFQGV
 QRIWRDHATPDVIYAEVELPEDTDIDGYGIHPALFDAALHPLLALTQPPTNDTDDTNTA
 DTGDQVRLPYAFTGISLHATHATRLRVRLTRTGADAITVHTSDTTGAPVAIIDSLITRPL
 TTATGSAPATTAAGLLHLSWPPHPD TTTDTDTDTDLALRYQVIAEPTQQLPRYLHDLHT
 STDLHTSTTEADV VVWPVPVPSNEELQAHQASDTAVSSRIHTLTRQTLTVVQDWLTHPD
 TGTRLVIVTRHGVSTSAHDPVPDLAAHA VWGLIRSAQNEHPGRFTLLD TDDNTNSDTLT
 ALTLP TRENQLAIRRDTIHIPRLTRHSSDGALTAPVVVDPEGTVLITGGTGT LGALFAEH
 LVSAHGVRHLLTSRRGPQAHGATDLQQR L TDLGAHVTTITACDISDPEALAA LVNSVPTQ
 HRLTAVVHTAAVLADTPVTELTGDQLDQVLAPKIDAAWQLHQLT YEHNLSAFIMFSSMAG
 MIGSPGQGNYAAANTALDALADYRHRGLPATSLAWGYWQTHGLTAHLTDVDLARMTRL
 GLMPIATSHGLALFDAALATGQPVSI PAPINTHTLARHARDNTLAPILSALITTPRRRAA
 SAATDLAARLNGLSPOQQQQTLATLVAAATATVLGHHTPESISPATAFKDLGIDSLTALE
 LRNTLTHTGLDLPPTLIFDHPTALTQHLHTRLTQIESPNSEDSMLNLKNDRIESYI
 FRNSGEDRAHVIANRLRSILSKWDGTRSPELPAELHLESATDDELFSLANMFRTPTSEIS
 PTLEGGRGVN*

FIGURE 12(continued)

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MlsA2 protein

VVSTEENLRVYLKQVITDLHQMQARLRKIEKQRSERVAVVGMACRFPGGVASADQLWDLV
 IAGRDVVGNF PADRGWDVEGLFDPDPDAVGKTYTRYGAFLLDDAAGFDAGFFGISPREARA
 MDPQQRLLLEVCWEALETAGIPAHTLAGTSTGVFVGAWAQS YGATNSDGAEGYAMTGGST
 SVMSGRIAYTLGLEGPATVDTACSSSLVAIHLACQSLRNNE SQLALAGGVTVMSTPAVF
 TEFSRQRLAPDGRCKAFAATADGTGWGEGAAVLVLERLSEARRNNHPVLAIVAGSAINQ
 DGASNGLTAPHGPSQQRVINQALANAGLTHDQVDAVEAHGTGTTLGDP IEASALHATYGH
 HHTPDQPLWLGSIKSNIGHTQAAAGAAGVVKMIQAITHATL PATLHVDQPSPHIDWSSGT
 VRLLTEPIQWPNTDHPRTAAVSSFGISGTNAHLILQQPPTPDTTQTPNTTTGSDPAVGSD
 SAVGSDPAVGVLVWPLSARSAPGLSAQAARLYQHLSAHPDLDPIDVAHSLATTRSHHPR
 ATITTSIEHHSENNHDTTDALAALHALANNGTHPLLSRGLLTPQGP GKTVFVFPQGGSQY
 PGMGADLYRQFPVFAHALDEVAAALNPHLDVALLEV MFSSQD TAMAQLLDQTFYAQPALF
 ALGTALHRLFTHAGIHPDYLLGHSIGELTAAYAAGVLSLQDAATLVTSRGR LMQSCTPGG
 TMLALQASEAEVQPLLEGLDHAVSIAAINGATSIVLSGDHDSLEQIGEHFITQDRRTTRL
 QVSHAFHSPHMDPILEQFRQIAAQLTFSAPTLPILSNLTGQIARHDQLASPDYWTQQLRN
 TVRFHDTVAALLGAGEQVFLELSPHPVLTQAITDTVEQAGGGGA AVPALRKDRPD AVAFA
 AALGQLHCHGISPSWNVLYCQARPLTLEPTAFQHQR YWLLPTAGDFSGANTHAMHPLLD
 ATELAENRGWVFTGRISPRTPQWLNEHAVESAVLFPGTGFVELALHVADRAGYSSVNELI
 VHTPLLLAGHDTADLQITVTD TDDMGRQSLNIHSHPHIGHDNTTTGDEQPEWVLHASAVL
 TAQTTDHNLPLTPVPWPPPGTAAIEVDDFYDDLAAQGYNYGPTFQGVQRIWRDHATPDV
 IYAEVELPEDTDIDGYGIHPALFDAALHPLLALTQPP TNDTDDTNTADTGDQVRLPYAFT
 GISLHATHATRLRVR LTRTGADAITVHTSDTTGAPVAIIDSLITRPLTTATGSAPATTAA
 GLLHLSWPPHPD TTTDTDTDALRYQVIAEPTQQLPRYLHDLHTSTD LHTSTTEADV VV
 WPVPVPSNEELQAHQASDTAVSSRIHTLTRQTLTVVQDWLTHPD TTGTRLVIVTRHGVST
 SAHDPVPDLAHA AVWGLIRSAQNEHPGRFTLLD TDDNTNSDTLT TALTLPTRENQLAIRR
 DTIHIPRLTRTAVLTTPD SGFWRLDTTGKGD LANLALLPTAHTALASGQIRIDVRAAGLN
 FHDVVVALGLIPDDGFGGEAAGVISEIGPDVYGF AVGDAVTGMTVSGAFAPSTVADHRMV
 MTIPARWSFPQAASIPVVF LTAYIALAEISGLSRGQRVLIHAGTGGVGMAAIQLAHLGA
 EVFATASAAKWSTLEALGVPRDHIASSRTLD FSNAFLDATNGAGVDVVLNCLSGEFVEAS
 LALLPRGGHFVEIGKTDIRDTEVIAATHPGVIYRALD LLSVSPDHIQRTLAQLSPLFATD
 TLKPLPTTNYSIYQAISALRDMSQARHTGKIVLTAPVVVDPEGTVLITGGTGTLGALFAE
 HLVS AHGVRHLLLT SRRGPOAHGATDLQQLR TDLGAHVTTITACDISDPEALAALVNSVPT
 QHRLTAVVHTAAVLADTPVTELTGDQLDQVLAPKIDAAWQLHQLTYEHNLSAFIMFSSMA
 GMIGSPGQGN YAAANTALDALADYRHRLGLPATSLAWGYWQTRTGVT AHLTDVDLARMTR
 LGLMPIATSHGLALFDAALATGQPVSIPAPINTHTLARHARDNTLT PILSALITTPRRRA
 ASAATDLAARLNGLSPQQQQQTLATLVAAATATVLGHHTPESISPATAFKDLGIDSLTAL
 ELRNTLTHNTGLDLPTLI FDHPTPHALTQHLHTRLTQSHTPVGP IASLLSHAIDEGKFR
 AGADLLMAASN LNQSFSNMAELNQLPAVTDIADASPDGLLT LICISTSENEYARLAAANI
 HSLTFAEIAAPGFYDAQLPNSIETSAEALATAITGAYANTSIVLV AHSIVCELAQATMTR
 LQDADIDLVLVLLDPLEGTNSTEDYVETVLTRIEHINAPRVGVDGYLAALGRYLQFHED
 RRIPIPETRHMTLHSDTKIDRAQTPMNL LQDEAALTALKIGNWMNDTGSIAVTLRDGPVF
 LGRARSVNMR*

FIGURE 13

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MslB protein

VIFGDAHQNCRGGRVLGDAVAVVGMSCRVPGASDPDALWALLRDGISVVDEIP SARWNLD
 GLVAHRLTDEQRSALRHGAFLDDVEGFDAFFGINPSEAGSMDPQQRMLLELTWAALEDA
 RIVPEHLGSSSGVFTGAMSDDYTTAVTYRAAMTAHTFAGTHRSLIANRVSYTLGLRGPS
 LVIDTGQSSSLVAVHVAMESLRREETS LAIAGGIHLNLSLAAALSAAHFGALSPDGRCYT
 FDARANGYVRGEGGGVVVLKRLNDALADGNHIYCVIRGSSVNNDGATQDLTAPGVDGQRQ
 ALLQAYERAEIDPSEVQYVELHGTGTRLGDPTEAHSLSVFGTSTVPRSPLLVGSIKTNI
 GHLEGAAGILGLIKTALAVHHRQLPPSLNYTVPNPKIPLEQLGLRVQTTLSEWPDLDKPL
 TAGVSSFSMGGTNAHLILQQPPTPDTTQTNPNTTGS DPAVGSDPAVGVLVWPLSARSAPG
 LSAQAARLYQHLSAHPDLDPIDVAHSLATTRSHHPRATITTSIEHHSENNHDTTDALAA
 LHALANNGTHPLL SRGLLT PQGPGKTVFVFPQGSGQYPGMGADLYRQFPVFAHALDEVAA
 ALNPHLDVALLEVMSQDQTAMAQLLDQTFYAQPALFALGTALHRLFTHAGIHPDYLLGH
 SIGELTAAYAAGVLSLQDAATLVTSRGRIMQSCTPGGTMLALQASEAEVQPLLEGLDHAV
 SIAAINGATSIVLSGDHDSLEQIGEHFITQDRRTTRLQVSHAFHSPHMDPILEQFRQIAA
 QLTFSAPTLPILSNLTGQIARHDQLASPDYWTQQLRNTVRFHDTVAALLGAGEQVFLS
 PHPVLTQAITDTVEQAGGGGAAPALRKDRPD AVAFAAALGQLHCHGISPSWNVLYCQAR
 PLTLPTYAFQHORYWLLPTAGDFSGANTHAMHPLLD TATELAENRGWVFTGRISPRTPQW
 LNEHAVESAVLFPNTGFVELALHVADRAGYSSVNELIVHTPLLLAGHDTADLQITVTDTD
 DMGRQSLNIHSHPHIGHDNTTTGDEQPEWVLHASAVLTAQTTDHNHLPLTPVPWPPPGTA
 AIEVDDFYDDLAAQGYNYGPTFQGVQRIWRDHATPDVIAEVELPEDTDIDGYGIHPALF
 DAALHPLLALTQPPTNDTDDTNTADTGDQVRLPYAFTGISLHATHATRLRVRLTRTGADA
 ITVHTSDTTGAPVAIIDSLITRPLTTATGSAPATTAAGLLHLSWPPHPDTTTDDTDTDA
 LRYQVIAEPTQQLPRYLHDLHTSTDLHTSTTEADV VVWPVPVPSNEELQAHQASDTAVSS
 RIHTLTRQTLTVVQDWLTHPDTTGTRLVIVTRHGVSTSAHDPVPDLAHA AVWGLIRSAQN
 EHPGRFTLLD TDDNTNSDTLTALTLP TRENQLAIRRDTIHI PRLTRHSSDGALTAPVVV
 DPEGTVLITGGTGTLGALFAEHLVSAHGVRHLLLT SRRGPQAHGATDLQQRLLD LGAHVT
 ITACDISDPEALAAALVNSVPTQHRLTAVVHTAAVLADTPVTELTGDQLDQVLAPKIDAAW
 QLHQLTYEHNLSAFIMFSSMAGMIGSPGQGN YAAANTALDALADYRHRGLPATSLAWGY
 WQHTGLTAHLTDVDLARMTRLGLMPIATSHGLALFDAALATGQPVSI PAPINTHTLARH
 ARDNTLAPILSALITTPRRRAASAATDLAARLNGLS PQQQQTLATLVAAATATVLGHHT
 PESISPATAFKDLGIDSLTALELRNTLTHTNTGLNLSSTLIFDHPT PHAVA EHLLEQIPGI
 GALVPAPVVIAAGRTEEPVAVVGMACRFPGGVASADQLWDLVIAGRDVVG NFPADRGWDV
 EGLFDPDPDAVGKTYTRYGAFLDDAAGFDAGFFGISPREARAMDPQQRLLLEVCWEALET
 AGIPAHTLAGTSTGVFVGAWAQSYGATNSDDAEGYAMTGGATSVMSGRIAYTLGLEGPAT
 TVDTACSSSLVAIHLACQSLRNNE SQLALAGGVTVMSTPAVFTEFSRQRLAPDGRCKAF
 AATADGTGWGEGA AVLVLERLSEARRNNHPVLAIVAGSAINQDGASNGLTAPHGPSQQRV
 INQALANAGLTHDQVDAVEAHGTGTTLGDPIEASALHATYGHHTPDQPLWLGSIKSNIG
 HTQAAAGAAGVVKMIQAITHATLPATLHVDQPSPHIDWSSGTVRLLEPIQWPNTDHPRT
 AAVSSFGISGTNAHLILQQPPTPNPTQT PEDCSPAQSPCATITDAGTGLSFVPWVISAKS
 AEALSAQASRLRLRLDDDPVDAIDLGWSLIATRSMFEHRAVVVGADRHQLQRGLAE LAS
 GNLGADVVGRRARAAGETVMVFPQGQSQR LGMGAQLYEQFPVF AA AFDDVVDALDQYLRL
 PLRQVMWGDDDEGLLNSTEFAPSLFAVEVALFALLRFWGVVPDYVIGH SVGELAAAQVAG
 VLSLQDAAKLV SARGRLMQALPAGGAMVAVAASQHEVEPLLVEGVDIAALNAPGSVVISG
 DQAAVRLIANRLADRGYRAHELAVSHAFHSSLM EPMLEEFARLASEIVVEQPQIPLISNV
 TGQLANADYGSAGYWVDHIRRPVRFADSVASLEAMGASC FIEVGPASGLGAAIEQSLKSA
 EPTVSVSALSTDKPESVAVLRAAARLSTSGIPVDWQSVFDGRSTQTVNLPT YAFQQRQFW
 LDANRIGQGD PASQPQAQNVESRFWEAVEREDVDGLADSIGVTASAMQTVLPALSSWRRR
 ERTQSELD SWRYQVTWLSSPATPSSITLSGIWLLIVPSELAKTDPVIGCAAAL EAHGALV
 TIITIFEPDFNRSLMGASLKDIGSHISGVISFLGIHGSEFSDSGAVKTLNLVQAMGDVHL
 DVPLWCLTQGA VSI SADDLIRCSSAALVWGLGRVVALEHPSWGGGLVDLPESPDDAAWER
 LCALLAQPTDEDQFAIRPSGVFLRRLIHAPATTTSKSSTAWAPRGTVLITGGTGALGAHV
 ARWLAKYESVDLLLT SRRGMAADGATELVDDLRTAGASVT VHACDVTDRTSVEAAIAGK
 SLDAVFHLAGRHOPTLLTELEDESFSDELAPKVHGAQVLS DITSNLTL SAFVMFSSVAGI
 WGGKSQGAYAAANAF LDSLAEKRRTLGLPATSVAWGLWAGGGMGRPSASGLNLIGLKSM
 SADLAVQALS DAIDRPQATLTVASVNWDRFYPTFALARPRPFLHEITEVMAYRESMRSS
 ASTATLLTSKLAGLTATEQRAVTRKLVLDQAASVLGYASTESLDTHESFKDLGFDLSLTAL

FIGURE 14

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ELRDHLQTATGLNLSSTLI FDHPTPHAVAEHLEQIPGIGALVPAPVVIAAGRTEEPVAV
VGMACRFPGGVASADQLWDLVIAGR DVVGNFPADR GWDVEGLFDPDPDAVGKTYTRYGAF
LDDAAGFDAGFFGISPREARAMD PQORLLLEV CWEALETAGI PAHTLAGTSTGVFVGAWA
QSYGATNSDDAEGYAMTGGATSVMSGRIAYTLGLEGPATVDTACSSSLVAIHLACQSLR
NNE SQLALAGGVTV MSTPAVFTEFSRQRGLAPDGRCKAFAATADGTGWGEGA AVLVLERL
SEARRNNHPVLAIVAGSAINQDGASNGLTAPHGPSQQRVINQALANAGLTHDQVDAVEAH
TGTTLGDP IEASALHATYGHHTPDQPLWLGSIKSNIGHTQAAAGAAGVVKMIQAITHA
TLPATLHVDQPSPHIDWSSGTVRLLTEPIQWPNTDHPRTAAVSSFGISGTNAHLILQOPP
TPNPTQTPEDCSPAQSPCATITDAGTGLSFVPWVISAKSAEALSAQASRLRLRLDDDPVV
DAIDLGWSLIATRSMEFHRVVVGADRHQLQRGLAELASGNLGADV VVGRARAAGETVMV
FPGQGSQR LGMGAQLYEQFPVFAA AFDDVVDALDQYLRLPLRQVMWGDDEGLLNSTEF AQ
PSLFAVEVALFALLRFWGVVDPYVIGH SVGELAAAQVAGVLSLQDAAKLVSARGRLMQAL
PAGGAMVAVAA SQHEVEPLLVEGVDIAALNAPGSVVISGDQAAVRLIANRLADRGYRAHE
LAVSHAFHSSLMPEM LEEFARLASEIVVEQPQIPLISNVTGQLANADYGSAGYWVDHIRR
PVRFADSVASLEAMGASCFIEVGPASGLGAAIEQSLKSAEPTVSVSALSTDKPESVAVLR
AAARLSTSGIPVDWQSVFDGRSTQTVNLPTYAFQRQRFWLDANRIGQGD PASQPQAQNV
SRFWEAVEREDVDGLADSIGVTASAMQTVLPALSSWRRAERTQSELD SWRYQVTWLSSPA
TPSSITLSGIWLLIVPSELAKTDPVIGCAAAL EAHGALVTIITIFEPDFNRSIMGASLKD
IGSHISGVISFLGIHGSEFSDSGAVKTLNLVQAMGDVHLDVPLWCLTQGAVSISADDLIR
CSSAALVWGLGRVVALEH PGSWGGLVDLPESPDAAWERLCALLAQPTDEDQFAIRPSGV
FLRRLIHAPATTTSKSSTAWAPRGTVLITGGTGALGAHVARWLAHKYESVDLLLT SRRG
AADGATELVDDLRTAGASVT VHACDVTDRTSVEAAIAGKSLDAVFHLAGRHQPTLLTELE
DESFSEDELAPKVHGAQVLS DITSNLTL SAFVMFSSVAGI WGGKSQ GAYAAANAF LDSLAE
KRRTLGLPATSVAWGLWAGGMDRPSASGLNLIGLKSMSADLAVQALS DAIDRPOATLT
VASVNWDRFYPTFALARPRPFLHEITEVMAYRESMRSSSASTATLLT SKLAGLTATEQRA
VTRKLVLDQAASVLGYASTESLDTHESFKDLGFDLSLTALELRDHLQTATGLNLSSTLI FD
HPTPHAVAEHLEQIPGIGALVPAPVVIAAGRTEEPVAVVGMACRFPGGVASADQLWDLV
IAGR DVVGNFPADR GWDVEGLFDPDPDAVGKTYTRYGAF LDDAAGFDAGFFGISPREARA
MDPQORLLLEV CWEALETAGI PAHTLAGTSTGVFVGAWA QSYGATNSDDAEGYAMTGGAI
SVMSGRIAYTLGLEGPATVDTACSSSLVAIHLACQSLRNNE SQLALTGGVTV MSTPAIF
TEFSRQRGLAPDGRCKAFAATADGTGWGEGA AVLVLERLSEARRNNHPVLAIVAGSAINQ
DGASNGLTAPHGPSQQRVINQALANAGLTHDQVDAVEAHGTGTTLGDP IEASALHATYGH
HHTPDQPLWLGSIKSNIGHTQAAAGAAGVVKMIQAITHATLPATLHVDQPSPHIDWSSG
VRLTEPIQWPNTDHPRTAAVSSFGISGTNAHLILQOPPPTPDTTQTPTNTTGS DPAVGSD
PAVGVLVWPLSARSAPGLSAQAARLYQHLSAHPDLDPIDVAHSLATTRSHHPRATITTS
IEHHSENNHDTTDALAALHALANNGTHPLLSRGLLT PQGPGKTVFVFP GQGSQY PGMGAD
LYRQFPVFAHALDACDAALQ PFTGWSVLAVLHDEPEAPSLERVDVVPVLF SVMVSLAAL
WRWAGITPDAVIGHSQGEIAAAHVAGALTPEAAAVVALRSRVLTDLAGAGAMASVLSPE
EPLTQLLARWDGKITVA AVNGPASAVVSGDTTAITELLITCEHENIDARAIPVDYPSHSP
YMEHIRHQFLDELPELT PRPSTIAMYSTVDGEPHDTAYDTTMTADYWRNIRNTVRFDH
TVAALLGAGEQVFLELSPHPVLTQAITD TVEQAGGGGA AVPALRKDRPD AVAFAAALGQL
HCHGISPSWNVLYCQARPLTLPT YAFQHQR YWLLPTAGDFSGANTHAMHPLLD TATELAE
NRGWVFTGRISPR TQ PWNLEH AVESAVLFP GTGFVELALHVADRAGYSSVNELIVHTPLL
LAGHDTADLQITVTD TDDMRQSLNIHSRPHIGHDNTTGTGEQPEWVLHASAVLTAQT TD
HNHLPLTPVPWPPPGTAAIEVD D FYDDLAAQGYNGPTFQGVQRIWRDHATPDVIYAEVE
LPEDTDIDGYGIHPALFDAALHPLLALTQPPTNDTDDTNTADTGDQVRLPYAFTGISLHA
THATRLRVRRLTRTGADAITVHTSDTTGAPVAI IDSLITRPLTTATGSAPATTAAGLLHLS
WPPHPDTTDTDTDT DALRYQVIAEPTQQLPRYLHDLHTSTDLHTSTTEADV VVWVPVVP
SNEELQAHQASDTAVSSRIHTLTRQTLTVVQDWLTHPD TTGTRLVIVTRHGVSTSAHPV
PDLAHA AVWGLIRSAQNEHPGRFTLLD TDDNTNSDTLTALTLP TRENQLAIRRDTIHIP
RLTRHSSDGALTA PVVVDPEGTVLTG GTGLGALFAEHLVSAHGVRHLLLT SRRGPOAH
GATDLQORLTDLGAHVITITACDISDPEALALVNSVPTQHRLTAVVHTAAVLADTPVTEL
TGDQLDQVLAPKIDAAWQLHQLTYEHNLSAFIMFSSMAGMIGSPGQGN YAAANTALDALA
DYRHLGLPATSLAWGYWQHTGLTAHLTDV D LARMTRLGLMPIATSHGLALFDAALATG
QPVSIPAPINTHTLARHARDNTLAPILSALITTPRRRAASAATDLAARLNGLSPQQQQQT
LATLVAAATATVLGHHTPE SISPATAFKDLGIDSLTALELRNTLTHTNTGLDLPPTLIFDH
PTPHAVAEHLEQIPGIGALVPAPVVIAAGRTEEPVAVVGMACRFPGGVASADQLWDLVI

FIGURE 14(continued)

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AGRDVVGNFPADRGWDVEGLFDPDPDAVGKTYTRYGAFLDDAAGFDAGFFGISPREARAM
 DPQORLLEVCWEALETAGIPAHTLAGTSTGVFAGAWAQSYGATNSDDAEGYAMTGGSTS
 VMSGRIAYTLGLEGPATVDTACSSSLVAIHLACQSLRNNESQLALAGGVTVMSTPAVFT
 EFSRQRLAPDGRCKAFAATADGTGFGEAAVLVLERLSEARRNNHPVLAIVAGSAINQD
 GASNGLTAPHGPSQQRVINQALANAGLTHDQVDAVEAHGTGTTLGDPIEASALHATYGH
 HTPDQPLWLGSIKSNIGHTQAAAGAAGVVKMIQAI THATLPATLHVDQPSPHIDWSSGTV
 RLLTEPIQWPNTDHPRTAAVSSFGISGTNAHLILQQPPTPDTTQTPNPTTGSDPAVGSDP
 AVGVLVWPLSARSAPGLSAQAARLYQHLSAHPDLDPIDVAHSLATTRSHHPRATITTSI
 EHHSENNHDTTDALAALHALANNGTHPLLSRGLLTPQGPVKTVFVFPQGSQYPGMGADL
 YRQFPVFAHALDEVAAALNPHLDVALLEVMSQQDTAMAQLLDQTFYAQPALFALGTALH
 RLFTHAGIHPDYLLGHSIGELTAAYAAGVLSLQDAATLVTSRGRIMQSCPTPGGTMALQA
 SEAEVQPLLEGLDHAUSIAAINGATSIVLSGDHDSLEQIGEHFITQDRRTTTLQVSHAFH
 SPHMDPILEQFRQIAAQLTFSAPTLPILSNLTGQIARHDQLASPDYWTQQLRNTVRFHDT
 VAALLGAGEQVFLLESPHPVLTQAITDTVEQAGGGGAAPALRKDRPDVAFAAALGQLH
 CHGISPSWNVLYCQARPLTLPTYAFQHORYWLLPTAGDFSGANTHAMHPLLDTATELAEN
 RGWVFTGRISPRTPQWLNEHAVESAVLFPGTGFEVALHVAADRAGYSSVNELIVHTPLLL
 AGHDTADLQITVTDTDMMGRQSLNIHSRPHIGHDNTTTGDEQPEWVLHASAVLTAQTDDH
 NHLPLTPVPWPPPGTAAIEVDDFYDDLAAQGYNYGPTFGQVQRIWRDHATPDVIYAEVEL
 PEDTDIDGYGIHPALFDAALHPLLALTQPPNTDNTADTGDQVRLPYAFTGISLHAT
 HATRLRVRLTRTGADAITVHTSDTTGAPVAIIDSLITRPLTTATGSAPATTAAGLLHLSW
 PPHPDTTDTDTDTDALRYQVIAEPTQQLPRYLHDLHTSTDLHTSTTEADVVPVVPVPS
 NEELQAHQASDTAVSSRIHTLTRQTLTVVQDWLTHPDTTGTRLVIVTRHGVSTSAHDPVP
 DLAAHAAVWGLIRSAQNEHPGRFTLLDNTNSDTLTALTLPTRNQLAIRRDTIHIPR
 LTRHSSDGALTAPVVVDPEGTVLITGGTGTLGALFAEHLVSAHGVRHLLLTSTRRGPQAHG
 ATDLQORLTDLGAHVTTITACDISDPEALAALVNSVPTQHRLTAVVHTAAVLADTPVTELT
 GDQLDQVLAPKIDAAWQLHQLTYEHNLSAFIMFSSMAGMIGSPGQGNAAAANTALDALAD
 YRHRLGLPATSLAWGYWQHTGLTAHLTDVDLARMTRLGLMPIATSHGLALFDAALATGQ
 PVSIPAPINTHTLARHARDNTLAPILSALITTPRRRAASAATDLAARLNGLSPOQQQQQTL
 ATLVAAATATVLGHHTPESISPATAFKDLGIDSLTALELRNTLTHTNTGLDLPPTLIFDHP
 TPHAVAHEHLEQIPGIGALVPAPVVIAAGRTEEPVAVVGMACRFPGGVASADQLWDLVIA
 GRDVVGNFPADRGWDVEGLFDPDPDAVGKTYTRYGAFLDDAAGFDAGFFGISPREARAMD
 PQORLLEVCWEALETAGIPAHTLAGTSTGVFAGAWAQSYGATNSDDAEGYAMTGGATSV
 MSGRIAYTLGLEGPATVDTACSSSLVAIHLACQSLRNNESQLALAGGVTVMSTPAVFT
 EFSRQRLAPDGRCKAFAATADGTGFGEAAVLVLERLSEARRNNHPVLAIVAGSAINQDG
 ASNGLTAPHGPSQQRVINQALANAGLTHDQVDAVEAHGTGTTLGDPIEASALHATYGH
 HTPDQPLWLGSIKSNIGHTQAAAGAAGVVKMIQAI THATLPATLHVDQPSPHIDWSSGTVR
 LLTEPIQWPNTDHPRTAAVSSFGISGTNAHLILQQPPTPDTTQTPNPTTGSDPAVGSDPA
 VGVLVWPLSARSAPGLSAQAARLYQHLSAHPDLDPIDVAHSLATTRSHHPRATITTSIE
 HHHSENNHDTTDALAALHALANNGTHPLLSRGLLTPQGPVKTVFVFPQGSQYPGMGADLY
 RQFPVFAHALDACDAALQPTGWSVLAVLHDEPEAPSLERVDVVPVLFVSMVSLAALWR
 WAGITPDAVIGHSQGEIAAAHVAGALTPEAAAVVALRSRVLTDLAGAGAMASVLSPEEP
 LTQLLARWDGKITVAAVNGPASAVVSGDTTITTELLITCEHENIDARAI PVDYPSHSPYM
 EHIRHQFLDELPELTTPRPSTIAMYSTVDGEPHDTAYDTTMTADYWYRNIRNTVRFHDTV
 AALLGAGEQVFLLESPHPVLTQAITDTVEQAGGGGAAPALRKDRPDVAFAAALGQLHC
 HGISPSWNVLYCQARPLTLPTYAFQHORYWLLPTAGDFSGANTHAMHPLLDTATELAENR
 GWVFTGRISPRTPQWLNEHAVESAVLFPGTGFEVALHVAADRAGYSSVNELIVHTPLLLA
 GHDTADLQITVTDTDMMGRQSLNIHSHPHIGHDNTTTGDEQPEWVLHASAVLTAQTDDHN
 HLPLTPVPWPPPGTAAIEVDDFYDDLAAQGYNYGPTFGQVQRIWRDHATPDVIYAEVELP
 EDTDIDGYGIHPALFDAALHPLLALTQPPNTDNTADTGDQVRLPYAFTGISLHATH
 ATRLRVRLTRTGADAITVHTSDTTGAPVAIIDSLITRPLTTATGSAPATTAAGLLHLSW
 PPHPDTTDTDTDTDALRYRVIAEPTQQLPRYLHDLHTSTDLHTSTTEADVVPVVPVPSN
 EELQAHQASDTAVSSRIHTLTRQTLTVVQDWLTHPDTTGTRLVIVTRHGVSTSAHDPVPD
 LAHAAVWGLIRSAQNEHPGRFTLLDNTNSDTLTALTLPTRNQLAIRRDTIHIPRL
 TRHSSDGALTAPVVVDPEGTVLITGGTGTLGALFAEHLVSAHGVRHLLLTSTRRGPQAHGA
 TDQLQORLTDLGAHVTTITACDISDPEALAALVNSVPTQHRLTAVVHTAAVLADTPVTELTG
 DQLDQVLAPKIDAAWQLHQLTYEHNLSAFIMFSSMAGMIGSPGQGNAAAANTALDALADY
 RHRLGLPATSLAWGYWQHTGLTAHLTDVDLARMTRLGLMPIATSHGLALFDAALATGQ

FIGURE 14(continued)

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VSIPAPINTHTLARHARDNTLAPILSALITTPRRRAASAATDLAARLNGLSPOQQOQTLA
 TLVAAATATVLGHHTPESISPATAFKDLGIDSLTALELRNTLTHTNTGLDLPPTLI FDHPT
 PHAVAEHLLEQIPGIGALVPAPVVIAAGRTEEPVAVVGMACRFPGGVASADQLWDLVIAG
 RDVVGNF PADRGWDVEGLFDPDPDAVGKTYTRYGAFLDDAAGFDAGFFGISPREARAMDP
 QORLLLEVWCWEALETAGIPAHTLAGTSTGVFAGAWAQSYGATNSDDAEGYAMTGGATSVM
 SGRIAYTLGLEGPATITVDTACSSSLVAIHLACQSLRNNEQLALAGGVTVMSTPAVFTEF
 SRQGLAPDGRCKAFAATADGTGFGEAAVLVLERLSEARRNNHPVLAIVAGSAINQDGA
 SNGLTAPHGPSQQRVINQALANAGLTHDQVDAVEAHGTGTTLGDP IEASALHATYGHHT
 PDQPLWLGSIKSNIGHTQAAAGAAGVVKMIQAI THATLPATLHVDQPSPHIDWSSGTVRL
 LTEPIQWPNTDHPRTAAVSSFGISGTNAHLILQQPPTPDTTQTPTNTTTGSDPAVGSDPAV
 GVLVWPLSARSAPGLSAQAARLYQHLSAHPDLDPIDVAHSLATTRSHHPRATITTSIEH
 HSENNHDTTDALAALHALANNGTHPLLSRGLLTPOGPGKTVFVFPGQGSQYPGMGADLYR
 QFPVFAHALDACDAALQPF TGWSVLAVLHDEPEAPSLERVDVVQPVLF SVMVSLAALWRW
 AGITPDAVIGHSQGEIAAAHVAGALTPEAAAVALRSRVLTDLAGAGAMASVLSPEEPL
 TQLLARWDGKITVAAVNGPASAVVSGDTTATITELLITCEHENIDARAIPVDYPSHSPYME
 HIRHQFLDELPELTTPRSTIAMYSTVDGEPHDTAYDTTMTADYWRNIRNTVRFHDTVA
 ALLGAGEQVFLELSPHPVLTQAITDTVEQAGGGGAAPALRKDRPD AVAFAAALGQLHCH
 GISPSWNVLYCQARPLTLPTAYAFQHORYWLLPTAGDFSGANTHAMHPLLDTATELAENRG
 WVFTGRISPRTPQWLNEHAVESAVLFPGTGFVELALHVADRAGYSSVNELIVHTPLLLAG
 HDADLQITVTDTDMDGRQSLNIHSRPHIGHDNTTTTGDEQPEWVLHASAVLTAQTDDHNL
 LPLTPVPWPPPGTAAIEVDDFYDDLAAQGYNYGPTFGQVQRIWRDHATPDVIYAEVELPE
 DTDIDGYGIHPALFDAALHPLLALTQPPTNDTDDTNTADTGDQVRLPYAFTGISLHATHA
 TRLRVRLTRTGADAITVHTSDTTGAPVAIIDSLITRPLTTATGSAPATTAAGLLHLSWPP
 HPDTTDDTDDTDALRYQVIAEPTQQLPRYLHDLHTSTD LHTSTTEADVVPVPSNE
 ELQAHQASDTAVSSRIHTLTRQTLTVVQDWLTHPDTTGTRLVIVTRHGVSTSAHDPVPDL
 AHAAVWGLIRSAQNEHPGRFTLLD TDNTNSDTLTALTLP TRENQLAIRRDTIHIPRLT
 RHSSDGALTAPVVVDPEGTVLITGGTGT LGALFAEHLVSAHGVRLHLLTSRRGPQAHGAT
 DLQORLTDLGAVTITACDISDPEALAAVNSVPTQHRLTAVVHTAAVLADTPVTELTGD
 QLDQVLAPKIDAAWQLHQLTYEHNLSAFIMFSSMAGMIGSPGQGN YAAANTALDALADYR
 HRLGLPATSLAWGYWQTHGLTAHLTDVDLARMTRLGLMPIATSHGLALFDAALATGQPV
 SIPAPINTHTLARHARDNTLAPILSALITTPRRRAASAATDLAARLNGLSPOQQOQTLAT
 LVAAATATVLGHHTPESISPATAFKDLGIDSLTALELRNTLTHTNTGLDLPPTLI FDHPTP
 HAVAEHLLEQIPGIGALVPAPVVIAAGRTEEPVAVVGMACRFPGGVASADQLWDLVIAGR
 DVVGNF PADRGWDVEGLFDPDPDAVGKTYTRYGAFLDDAAGFDAGFFGISPREARAMDPQ
 QORLLLEVWCWEALETAGIPAHTLAGTSTGVFAGAWAQSYGATNSDDAEGYAMTGGATSVM
 GRIAYTLGLEGPATITVDTACSSSLVAIHLACQSLRNNEQLALAGGVTVMSTPAVFTEFS
 RQRLAPDGRCKAFAATADGTGFGEAAVLVLERLSEARRNNHPVLAIVAGSAINQDGAS
 NGLTAPHGPSQQRVINQALANAGLTHDQVDAVEAHGTGTTLGDP IEASALHATYGHHTP
 DQPLWLGSIKSNIGHTQAAAGAAGVVKMIQAI THATLPATLHVDQPSPHIDWSSGTVRL
 TEPIQWPNTDHPRTAAVSSFGISGTNAHLILQQPPTPDTTQTPTNTTTGSDPAVGSDPAVG
 VLVWPLSARSAPGLSAQAARLYQHLSAHPDLDPIDVAHSLATTRSHHPRATITTSIEHH
 SENNHDTTDALAALHALANNGTHPLLSRGLLTPOGPGKTVFVFPGQGSQYPGMGADLYRQ
 FFPVFAHALDEVAALNPHLDVALLEVMSQQDTAMAQLLDQTFYAQPALFALGTALHRLF
 THAGIHPDYLLGHSIGELTAAYAAGVLSLQDAATLVTSRGRMQSCTPGGTMLALQASEA
 EVQPLLEGLDHAVSIAAINGATSIVLSGDHDSLEQIGEHFITQDRRTRLQVSHAFHSPH
 MDPILEQFRQIAAQLTFSAPTLPILSNLTGQIARHDQLASPDYWTQQLRNTVRFHDTVAA
 LLGAGEQVFLELSPHPVLTQAITDTVEQAGGGGAAPALRKDRPD AVAFAAALGQLHCHG
 ISPSWNVLYCQARPLTLPTAYAFQHORYWLLPTAGDFSGANTHAMHPLLDTATELAENRGW
 VFTGRISPRTPQWLNEHAVESAVLFPGTGFVELALHVADRAGYSSVNELIVHTPLLLAGH
 DTADLQITVTDTDMDGRQSLNIHSRPHIGHDNTTTTGDEQPEWVLHASAVLTAQTDDHNL
 PLTPVPWPPPGTAAIEVDDFYDDLAAQGYNYGPTFGQVQRIWRDHATPDVIYAEVELPED
 TDIDGYGIHPALFDAALHPLLALTQPPTNDTDDTNTADTGDQVRLPYAFTGISLHATHAT
 RLRVRLTRTGADAITVHTSDTTGAPVAIIDSLITRPLTTATGSAPATTAAGLLHLSWPPH
 PDTTTDDTDDTDALRYQVIAEPTQQLPRYLHDLHTSTD LHTSTTEADVVPVPSNEE
 LQAHQASDTAVSSRIHTLTRQTLTVVQDWLTHPDTTGTRLVIVTRHGVSTSAHDPVPDLA
 HAAVWGLIRSAQNEHPGRFTLLD TDNTNSDTLTALTLP TRENQLAIRRDTIHIPRLTR

FIGURE 14(continued)

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HSSDGALTAPVVVDPEGTVLITGGTGTGLGALFAEHLVSAHGVRHLLLSRRGPQAHGATD
 LQQRLLDLGAHVTTTACDISDPEALAAVNSVPTQHRLTAVVHTAAVLADTPVTELTGDQ
 LDQVLAPKIDAAWQLHQLTYEHNLSAFIMFSSMAGMIGSPGQGNAAAANTALDALADYRH
 RLGLPATSLAWGYWQHTGLTAHLTDVDLARMTRLGLMPIATSHGLALFDAALATGQPV
 IPAPINTHTLARHARDNTLAPILSALITTPRRRAASAATDLAARLNGLSPQQQQQTLATL
 VAAATATVLGHHTPESISPATAFKDLGIDSLTALELRNTLTHNTGLDLPTLI FDHPTPH
 ALTQHLHTRLTQSHTPVGP IASLLSHAI DEGKFRAGADLLMAASNLNQSFSNMAELNQLP
 AVTDIADASPDGLLTLCISTSENEYARLAAANIHSLTFAEIAAPGFYDAQLPNSIETSA
 EALATAITGAYANTSIVLVAHSIVCELAQATMTRLQDADIDLVLVLLDPLEGNTSTEDY
 VETVLTRIEHINAPRVGVDGYLAALGRYLQFHEDRRIPIPETRHMTLHSDTKIDRAQTPM
 NLLQDEAALTALKIGNWMNDVGVALSVNLE*

FIGURE 14(continued)

Mup045 protein

VIWNDIYISGTGRFIPSMRPINDIQVDGVPNDHTIVQSDYISFTEADEPATVMATRAATE
 ALTTSELVSADVGVLIIYAAIIGDAHHFAPVCHVQRVLRAPDALAFELSAASNGGTQGI
 AANLMTADASVKAALVCTAYRHPIDIISRWSSGMVFGDGAAAVALSRDGGMVRLISGYH
 SLPELEVLARNRSNERLGFVLPDVG LGKYLTAIARMYQAVIAQVLEEAQTSIAEIDYFGL
 IGIGIPSLTATILEPNGIPVNKTSWGLLRQM GHVGACDPLLSLNHLFEQNV LKRGDKVLL
 LGGGVGYRLTCIVAEIAMNPGVPGHSTS*

FIGURE 15

Mup053 protein

VRQRLNWIAAHGLLRGTARLAARLGDVQSRLVADPMVMANPAPFCDELRAIGPVVSSYGT
 HLVVSHAIAHELLRSEDFEVVSLGSNLPAPMRWLERRTRDDTPHLLLPPSLLAVEPPNHT
 RYRKAVSSVFTPKAVAGLRDHVEETASALLDQLTDQASAVDIIARYCSQLPVAVICDILG
 VPSRDRNRVLKFGQLAGPCLDFGLTWRQHQQVRQGLQGLHFWITEHLEELRSNPGDDLMS
 QMIHASENGSSETHLHATEVRMIGLVLGASFATMDLLGNGIQVLLDAPELRDALSQRPO
 LWPNAVEEILRLPEPPVQLAGRMARKDTEVAGTAIKRGQLVAIYLGAVNRDPSVFADPHRF
 DITRANANRHIAFSGGRHFCLGAALARVEGEVGLRMLFERFPDVRAAGPGNRRDTRTLRG
 WSQLPVQLGAARSMAIR*

FIGURE 16

Mup038 protein

MIVWPPEVSTVVVDVGVAMSALVAEPDQEPKAVILALHGGATNARYFDCPGHRALSLHHT
 GAAAGFTVVALDRPGYGSSAGDPDAMNRP HQRAALAYGALDRILAQRPRGAGVFIMGHSN
 GCELAMWMATETRGAE LLGIELAGTGWHYQPEAREILTATGEHRWVGLYDLLWHPORLY
 PPEVLNAAIISSSAPAYEEQMADWTRRTFLELVPVRVPVHFSIAQHEKVWQRDSSALD
 EIAVLFSGAPRFLHEQPEAGHNISLGHTAGDYHTTVLSFVQQCLAERLANAQQDVLAA
 E*

FIGURE 17

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atgccagcac cgagcgtgtt tgtcggcctg gaactcgaca ccaacagtta caccggtgtg 60
ccgtgtctgga gcgctggccc cgcctactgg gccacaaca ccgtcgcggt ggcctacgac 120
ctgcgtctatc aacagatccg gtcgctgatg tgtgacggcg gcatcgcccg aaaaaccctg 180
atcgtcatcg ccgcggccat ggcacgtcac gccgactgga gcaccggccg caactgccgg 240
ccaccaaca accagctcga agccgcgaca ggcttccacc agcgcacccat ccagcggggc 300
cacgaatgcc tacgcctact cggggtggct accgaggtgc tgcgcgccg ccaacgcacc 360
tacatcgagc gcatggcctc ctggagaatg ggcgatcgcc acccgggctg ggcgtccgtg 420
tgggcactac acgacaacgg cgaggtcgca cgggttgtcc acagcttgct accccacctg 480
gaacggtcct cagtaaccac acacacctca cctaaaacaa gcctgtttac taccaccctg 540
ggcgccacac gcgcccggga aagcggcgct acgcgcgca acagcccaga cgccggggc 600
cgcgacttg cggtcfaatg gcgagcagac ccccatgctc ccccatggac tcgtcggtac 660
agcctacga gctggtcagc aatgctcgct gcccccag ccgcaggttg gactgcacgc 720
gacctgaccg cattggtaca agactggctc ggtaccggtc accgaatacc gtccactcca 780
gcgcgcccga ctgcccctgt cggcacactg cttgcttgcc ataccagcca caacagcatc 840
caacaccgcc cagctgcact cgaggaagca cgcgaggccg cagacctggc cgcggttcgc 900
aaacggattc aaaaacaaac cgctgaacac caccgcaacc tcgcgccgcg agaagccggc 960
cgcgcgcac tggcggtgct cggccaccag gccgccagaa ttgctgcccg tctgtgctgt 1020
cgcaacggcg cccgacggcg caccaaaatg gtcgcgccag aagtagcgag cgtcgatgctg 1080
gcgatccggc gggcccggcg ccgctaacc agcggcctac gctgacagca gttcggtgctg 1140
atcgagcagc gatgctgccc tgcgcctaact caactccacc ggatcgatcc cttgtgctc 1200
agctaccggc accagttccg tcagcaagtc gccgcactgg cgaataagag ccggcaactt 1260
tgttctctgcc gccgcctcga gctctcgaag cttggtggtg tcgaaacgta cctgcagccg 1320
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tgacagcccg cccgtggcgc actggcgctt gaactcggcg gcgtttgtca tgggaactcc 1440
ttcaatagtg ggggatcgct gagccggctc gggcggtac gacatgtaag ccaacttgca 1500
gcaaccctgc tgcgccacac gcgctcatgt aagccagaat tttgtctcgc ccaactccc 1560
atcgcccccc aagaaccgta gagagcaggc tttgaactgc ggatcagc cgccgttggt 1620
gcaatgcgcg gatgtaaac atgtaagtaa gtttgccata gaacgaggtt ttgcataccg 1680
gatctcgcg cgcggtcac gaaagtggcg caggacttta cttacatacc cctcctcg 1740
caagaatggg accgtgtcat cgcccagcga accgtcggcg tatacgtctg ccgatgccgg 1800
caagcagttg ggcgtcaccc cccagcgcgt gagccaaatg ctgagcagcg gcgagctgac 1860
aggcccgcaa tatccacaac aacgggttcc caagaacgcg gtgcgctct ggaatggtc 1920
gctcgaccag gagttggcac gaagaaggtc cactcccccg ccacgtcact cagcgagaca 1980
acaaccgcac cccggtgccg atcaggggta cctcgcgcaa tggtagagcc gccgggaagc 2040
gcggtccaac ccgctgcgc acgaactcaa agttgcgca gacctcgctc gacagcatgc 2100
cagcgacgag cgctcgaagg cccgacagct gatgtcgaag ctgcgcgac tgaccatcca 2160
gcaggtgaa ctcacgaac ggctaaaaga cgacctcgca gtggaatcgg aacgtaccga 2220
acagatcctc tgacatatac ccgatgcctt aaccagctc ctggccccc acttcggccc 2280
accaccgtga cccgcgatca gcaggtaact caggcgctct tcttcgggg caggaaacgca 2340
ttgagcacag gggcgatcca cgtcgatcgg gtatcgaatc ccaactttga gccgatgggt 2400
tcgatgacct cctctgtctc ggcggtcaga ctaaacgcga tctgcgcgt gccaccaccg 2460
agatagcgca cggccgaagg gtcggccggg aaaaggctcg gggtaggtgc agtcaggtac 2520
cggctcttct cgatgatctc ggccagttca ccagcctggt acttgatgct gatcgctcc 2580
aaaaccacat gcaaattggt tgacttcacg ttgtgccgat acttctcgaa gcggctcttg 2640
acgccaggac tgacatatac cgccgtggtc ggcttgacc gagtgcgtgg ccggccaggc 2700
ttgcgtgagg gcaacttggc ggccgagaca tcagaggtct tagaggcgt tgcggcaacc 2760
ggctctgctc caacaggtac ctcgacagca gcctgttcgg gagcactggc gggccgaggc 2820
tgggctgctc tgacagagtc agctagacca gcgcccgcac tcttcggctt tgtgaggtct 2880
gcgagatccg cttcgggcag ctcctgcggc gtttaactgc tcacggccac actccttctg 2940
tgatcaggtc ctggcgatc tttgaacccc gcgtgagaat ttctcgggtc agcttgcgga 3000
agtctctggc cacgtcaca gatgtcgtgc tgacgaccgt agtcgcatct gctctcccct 3060
gccgtatcgc tgaccgagac ggattattga cgatttcctg ctcaagttcg tgggccaacc 3120
gaccaaactt aggcacgtcc ctgccacag cttctgagtg gcggatgaac gaatcgagca 3180
tcacgtcatc gttctgcccc aaatctgcag ccacattctt cttcatctct tcccggatcc 3240
tcgtcgatga agttcctgac gcaaacacga aacagccgag caacaccaca gatgggttgt 3300
gctcgcgcat cgcccttaga tcgcctgcca actcgcgcag tccggtcctt gataggtcat 3360
cggctctcat cggaactaca acaaaccggc acgcacacag ggcgcctga agaagcaact 3420
gggtctccgg aggggaatca atgaagataa ccccgtaatg atcactgac tgtgccaacg 3480
ccagcgccag cgacatcagc acctgtttgg cagctcgcgg gttgccatc tctgcagcca 3540
tcaccggcgc gatccgacgg acgaaaggcc caccgggaac aacatccaat cccggacgga 3600
catcgggaaat cgggggtcaac gcagcgccgg cagtaatcgc gctgtagaga ttctaccct 3660
tgtctgcggc ttctgtatcc gcgaagccaa gcatgttcgc caggttgccc tggccgttga 3720
gatcgaccaa taaggcgcg gctccatcgg aggcaacgag cgcggcgctg tgggtagaac 3780
acgtcgactt cctaccacca ccttgccgt tggcgacag ataaacattg cccagcttgc 3840
tccaattgac cgcgggttct accagcccag cgtcgtccca aacggctacg cttctactca 3900

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FIGURE 18

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tgccggcgcc	ttactgtgtt	ggaatcggga	gaatgccg	cctggcatgc	cgcgaccga	3960
accgcactgc	acccacgcg	ctgtcacggt	ctgcagagtc	tagggcgatc	agctcgggtg	4020
catatcccta	ctcgtgtccg	gttcgcacca	tcgcgtgcca	cttgggtgac	tatgacctac	4080
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FIGURE 18(continued)

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FIGURE 18(continued)

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tatccaccgg	ccacacccaa	cactgccccg	catcgcgctg	cagcacgcat	cgccgcgcga	15720
gtagtcggcg	cagcgctcgc	agtgatcgcg	ctgatagtgc	tcatcaccac	cgctggcgga	15780

FIGURE 18(continued)

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tcaacaaac	cgggcgccgc	cctcaccac	accacaccga	ctgtctcagc	acagccaccg	15840
tcactacga	cgaccccgcc	cccgcgcccg	cccacccgcg	cggcagccct	ggcagggctg	15900
ctgctcgaca	cagacaccat	caacgcgctg	ataaactccg	gagaactagc	ggtggaccca	15960
aagcacacga	cgacgaagtt	gttcaccgac	accgcccacc	acccggcatg	cgccggagtg	16020
ttggtcaacg	ccagcaaaaca	ggtctacgac	ggcagcggat	gggtcgagc	gcaaacccaa	16080
gccttcgctg	acaacaccac	ccgacaacac	gtcgtctacg	aatcggtaat	cagctatccc	16140
tcagcacgca	ccgccaccaa	aatggttgcc	caagaagccc	acaactggca	acgctgcaac	16200
ggccgatcca	taaccaccac	cgccaccagc	taccggccc	agacttggtt	tgctgccacc	16260
gtcgacaacc	acgacggcat	gctcaccgcy	ttgatgaacc	aagaaggcgc	tcgaggctgg	16320
gcttgccagc	acgcattgac	cgacgcgaac	aacatcgtea	tcgacattga	ggtatgcggt	16380
gccgacatca	cccatcaagc	caccgcaatc	gccaagaagg	tcgccccaaa	tgtccactga	16440
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FIGURE 18(continued)

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cggggagtcg	gcgcagggtc	agcgggcggtg	atcggacctc	cgaggatggg	gtaccccggtg	20220
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gacaccgcta	cccagcgcca	attcgattgt	ggcgaccgcg	ctggaatgag	ttcatcccat	23700

FIGURE 18(continued)

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FIGURE 18(continued)

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FIGURE 18(continued)

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FIGURE 18(continued)

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FIGURE 18(continued)

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gcaccggcac	cggccagggtc	ggtcaagaca	cggctgcgca	aagccactac	cgcagctgct	39600
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FIGURE 18(continued)

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cacggcacag	gcgttagggg	gaggtggttg	tggtcggtgg	tttgtcggtg	caggactgcg	43860
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FIGURE 18(continued)

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agtcctgtggc ttgtggcgat gggcatcaaa cccaggcggg tcatgcgggc tagatctaca 47520
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FIGURE 18(continued)

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FIGURE 18(continued)

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FIGURE 18(continued)

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FIGURE 18(continued)

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FIGURE 18(continued)

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FIGURE 18(continued)

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atccaaagcg	atctcaatga	ccgttttgggt	catcgccttg	agcaatccgc	caggcccggt	76080

FIGURE 18(continued)

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taaccaaacg	ccggcctcgc	gggcctggcg	caccaactcg	cgggcgactt	ctaactcacc	76140
aacatcgaga	ctactgggaa	cgtaaatagc	cgccacggcg	ccggcctcat	cttcgtgggt	76200
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FIGURE 18(continued)

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FIGURE 18(continued)

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FIGURE 18(continued)

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FIGURE 18(continued)

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FIGURE 18(continued)

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FIGURE 18(continued)

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FIGURE 18(continued)

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FIGURE 18(continued)

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FIGURE 18(continued)

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FIGURE 18(continued)

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FIGURE 18(continued)

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FIGURE 18(continued)

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ggtgctgacg	ccgtggcggg	tcacgatgac	cagtcgggtg	ccggtgggtg	cggggtgagt	133260
gagccagtc	tgcaccacgg	taagtgtttg	gcgggtcagg	gtgtgtatcc	gagaagacac	133320
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acccaacacc	cgacctcccc	tgcagttttg	gtgagcatct	ccgaagatca	cgcaccctag	137280

FIGURE 18(continued)

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FIGURE 18(continued)

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acggcgcaat	ggccaagtac	tggtcgacgg	tgctgacgga	gttgaaaaac	cgcggcggtg	145440
ccgacatctt	cttcctggtc	tgtgacggcc	tcaaggagct	gccggactcg	gtgagcgccg	145500

FIGURE 18(continued)

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FIGURE 18(continued)

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gcggtgtcca	aggacaccgt	tagccggatc	accgactgcg	ttctcgagga	gatgaccgcg	149880
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gccggacacc	gtgacgtgct	gggcatgtgg	gccggtgaag	gtgacggcga	atcgccaag	150060
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FIGURE 18(continued)

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FIGURE 18(continued)

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FIGURE 18(continued)

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FIGURE 18(continued)

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FIGURE 18(continued)

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FIGURE 18(continued)

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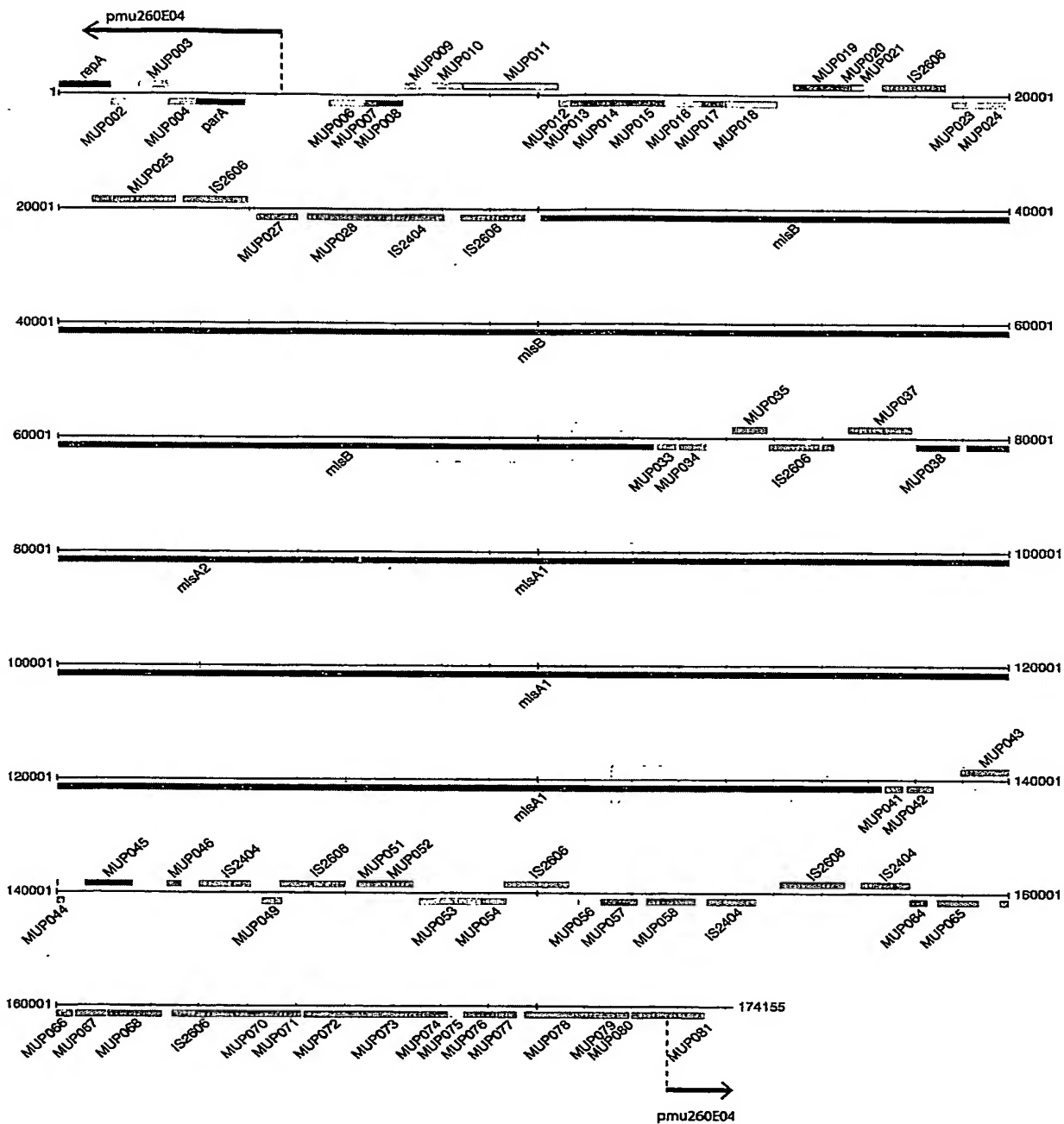


FIGURE 19

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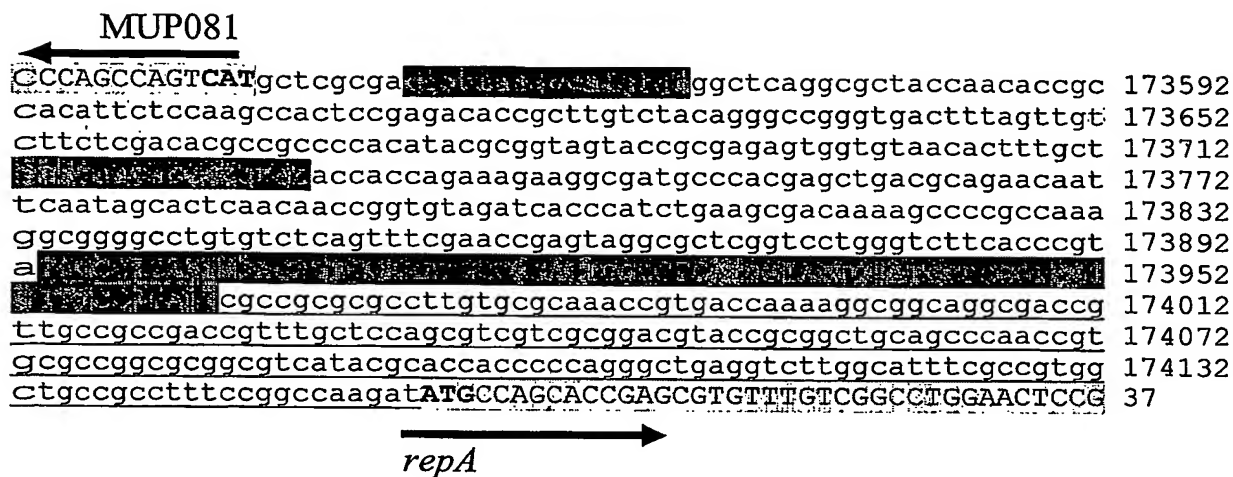


FIGURE 20

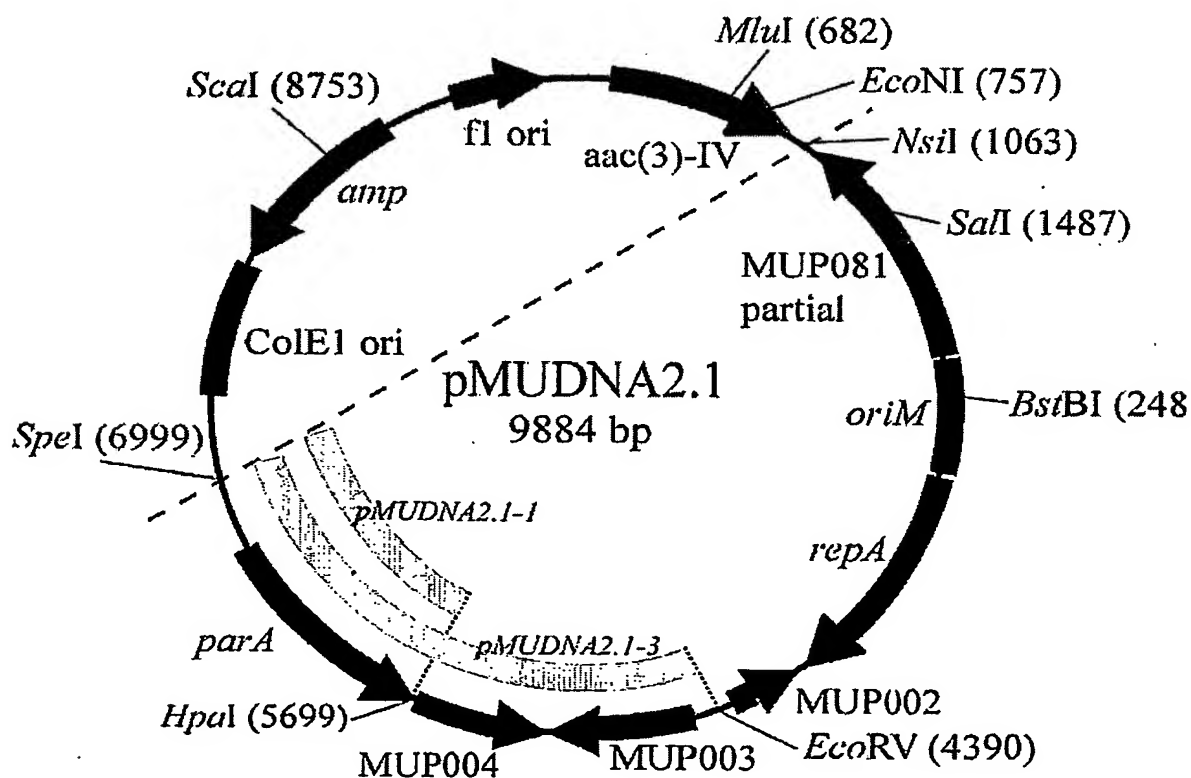


FIGURE 21

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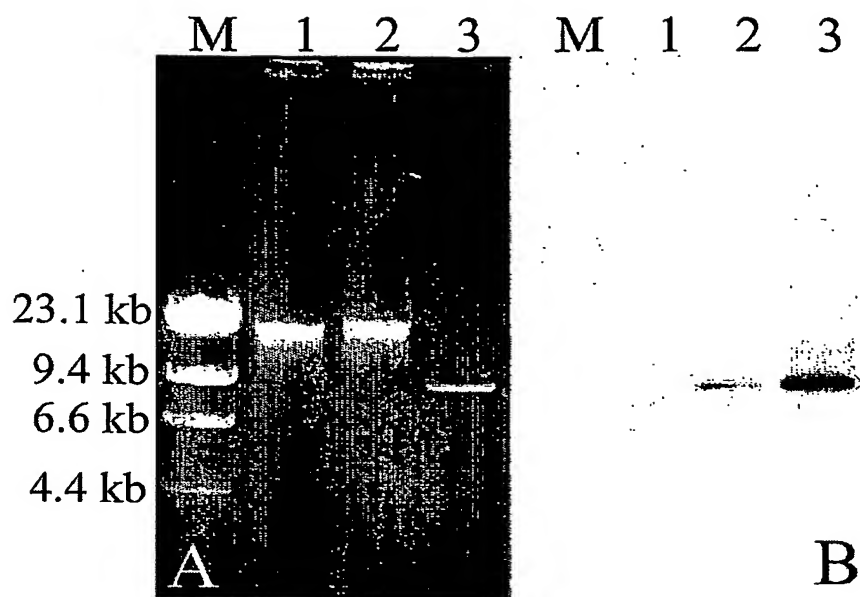


FIGURE 22A

FIGURE 22B

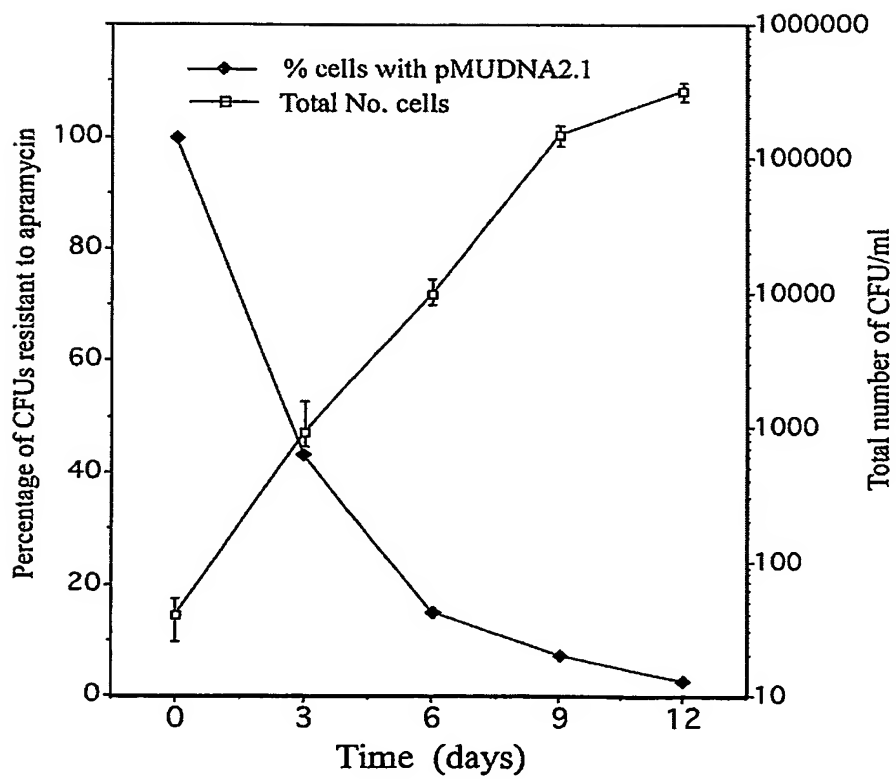


FIGURE 23

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AGCGCAGGGCGGGGGTGGCCAGGCAGGGC...GCCCTGGGTGGCCAGGTATGGCT [SEQ ID NO.:59] 10 bp
CGGCGCGGGTTGCTGCGGCGGCAGGGC...GCCCTGCCGCGGCGGCAAGTCGG [SEQ ID NO.:60] 10 bp
AACACCGCATTCCTCCGGTCACGCAGGGC...GCCCTGCCCGGTACCGCCGCCG [SEQ ID NO.:61] 10 bp
GGCAACGGATCTAGCCGGGGTGAGGGC...GCCCTGAGCCGGGGTGACAGTCGG [SEQ ID NO.:62] 10 bp
CGAGGCCATCGCCATCGCCGCCGAGGGC...GCCCTGCATCGCCGCCGAACCCT [SEQ ID NO.:63] 10 bp
ACGATGCCGGAGAAATCTCAGCGCAGGGC...GCCCTGAATCTCAGCGCCGGGGG [SEQ ID NO.:64] 10 bp

FIGURE 24

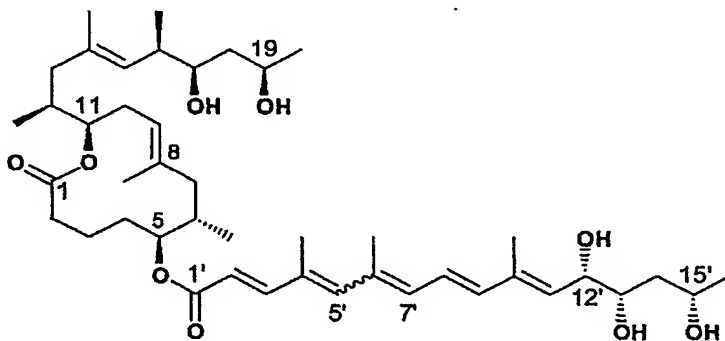


FIGURE 25

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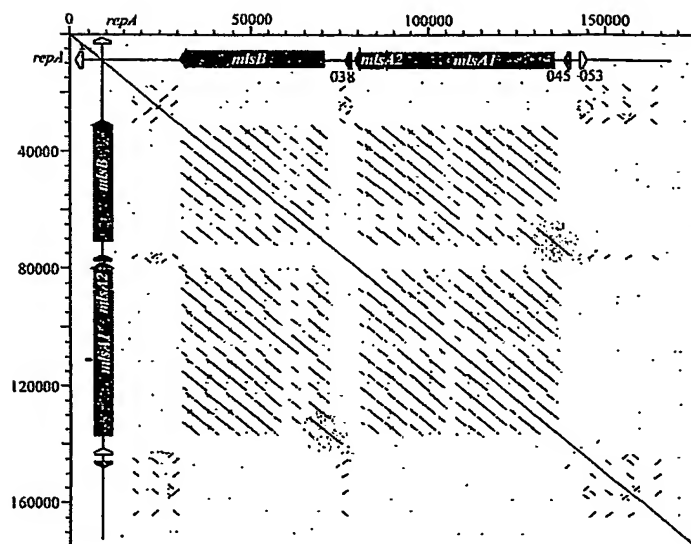


FIGURE 26

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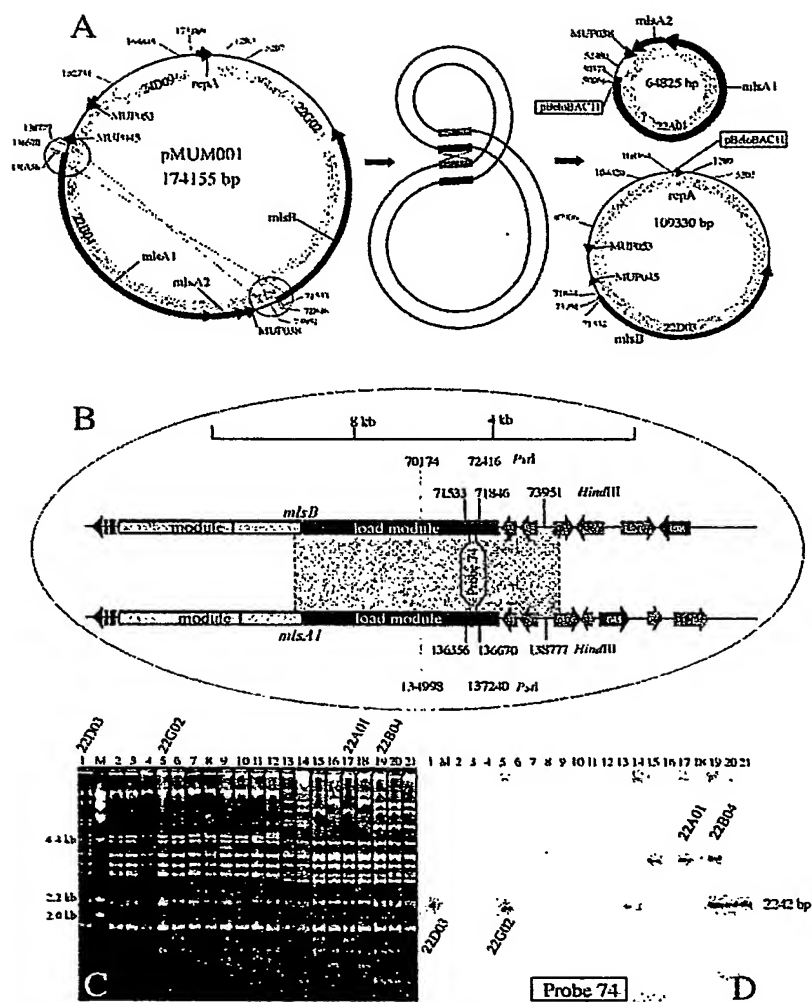


FIGURE 27A - FIGURE 27B - FIGURE 27C - FIGURE 27D

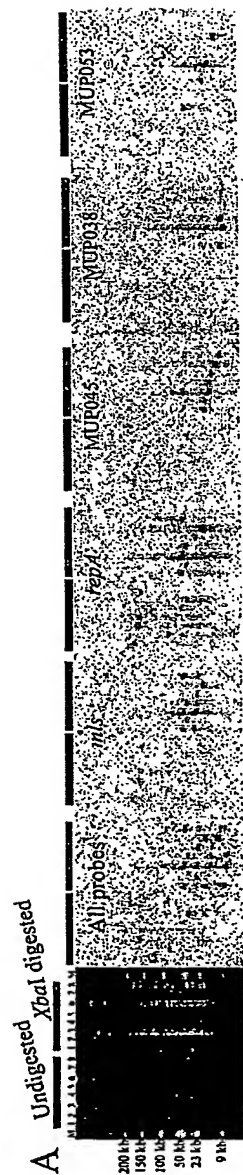


FIGURE 28A

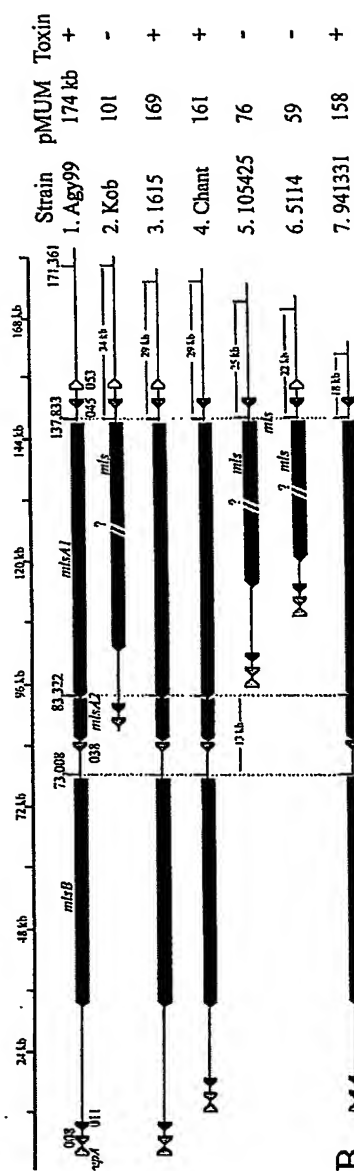


FIGURE 28B

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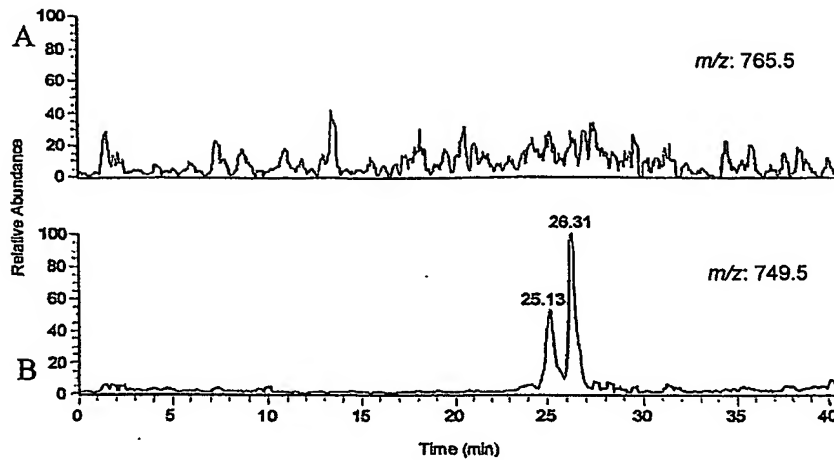


FIGURE 29A - FIGURE 29B

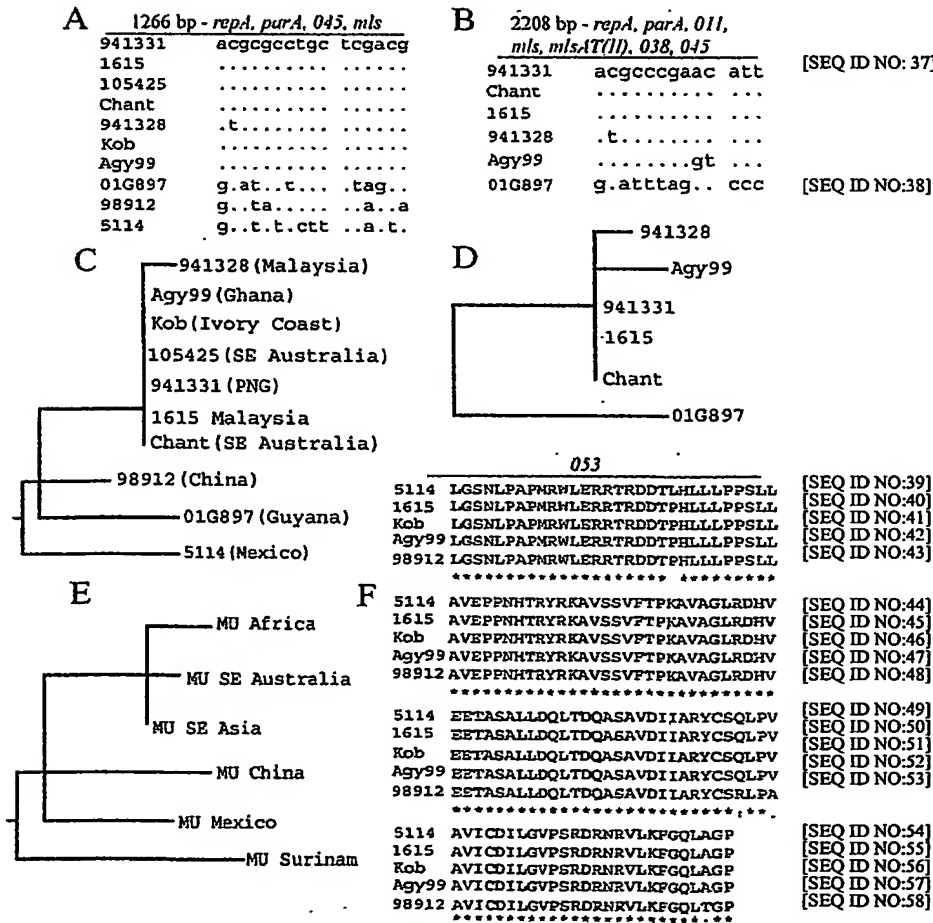


FIGURE 30A - FIGURE 30B - FIGURE 30C - FIGURE 30D - FIGURE 30E - FIGURE 30F

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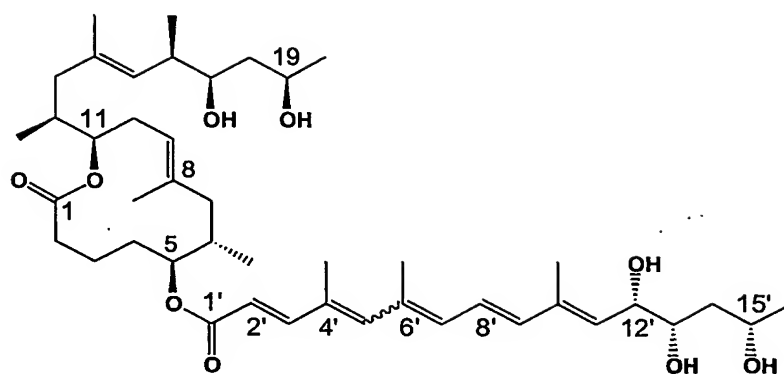


FIGURE 31A

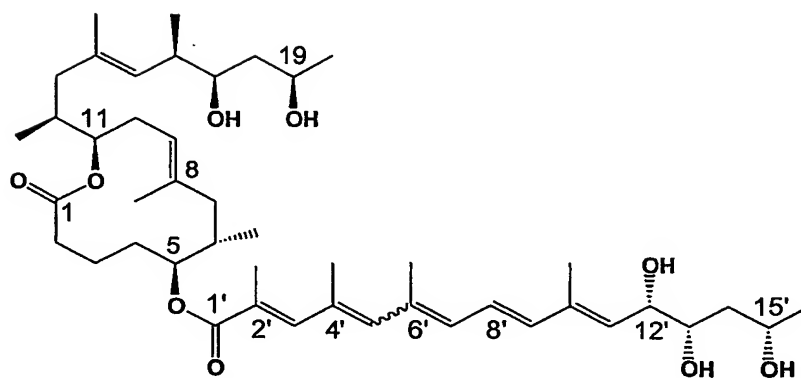


FIGURE 31B

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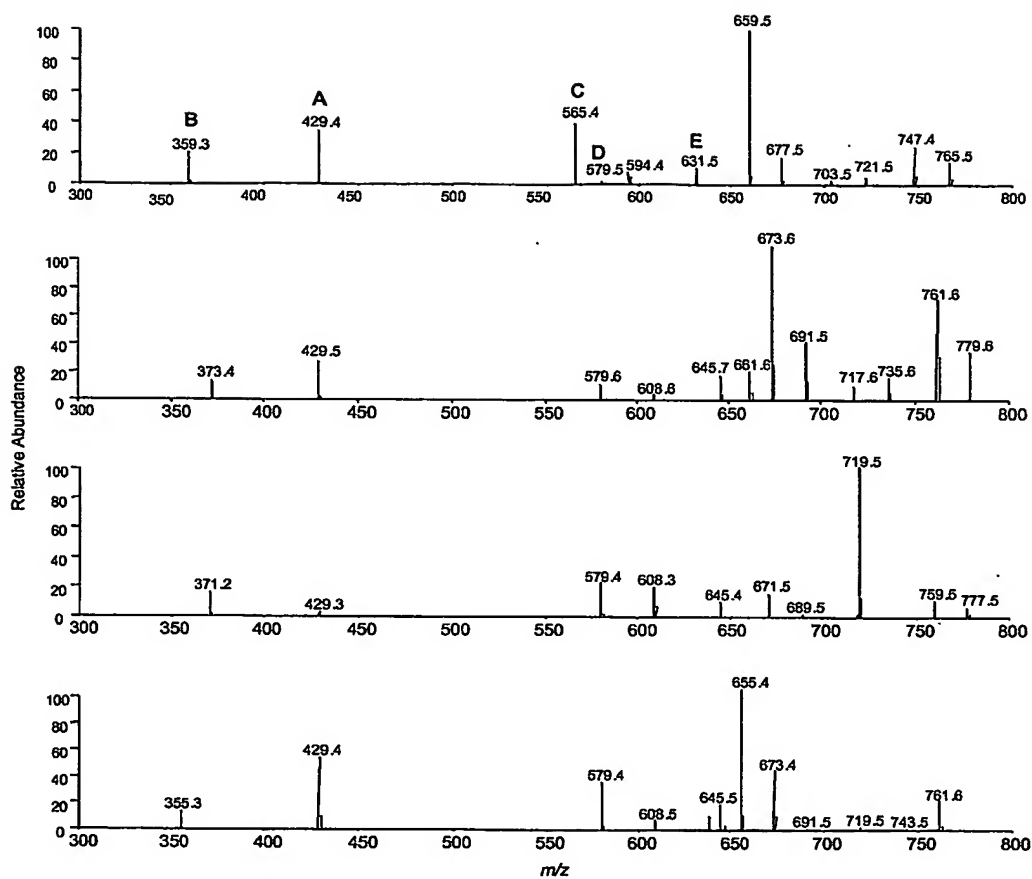


FIGURE 32

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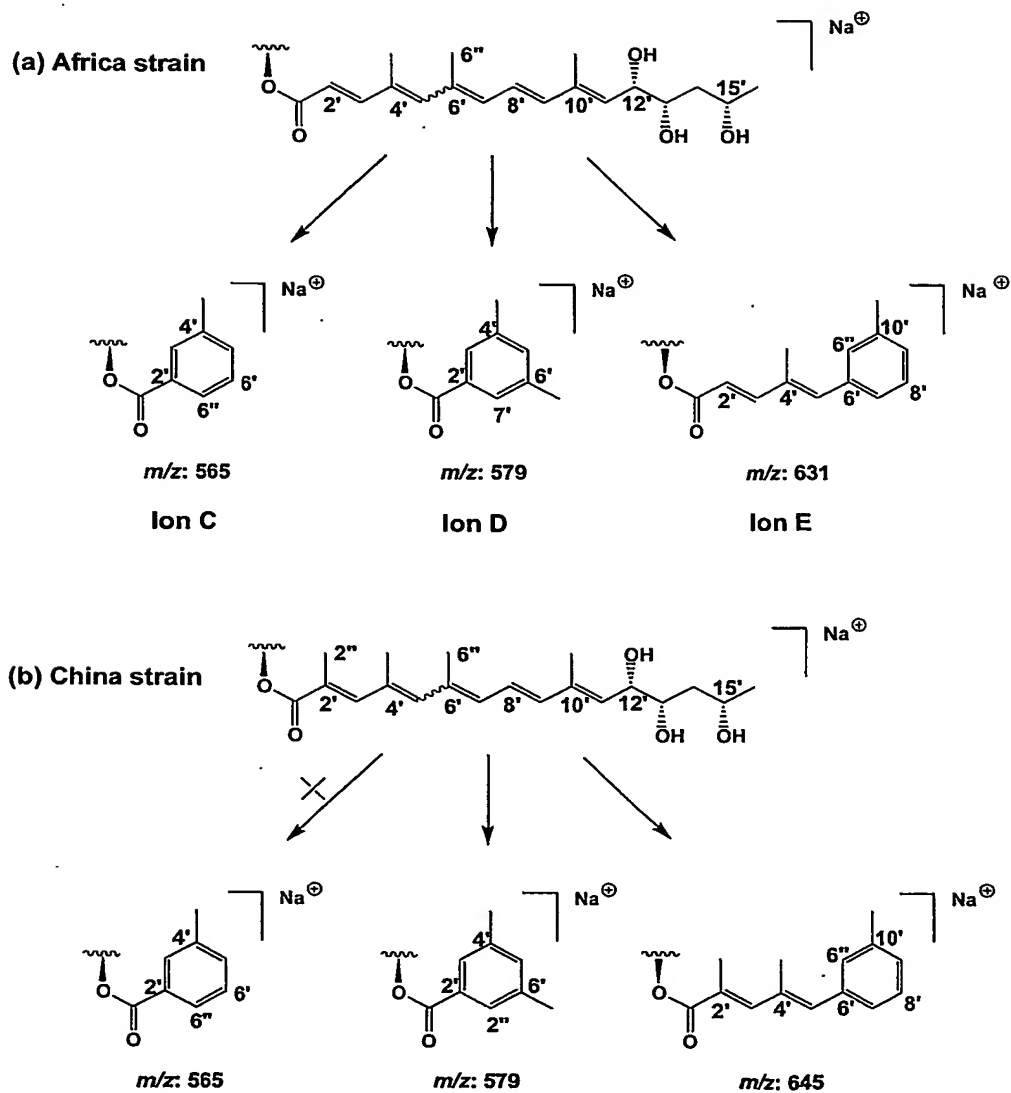


FIGURE 33

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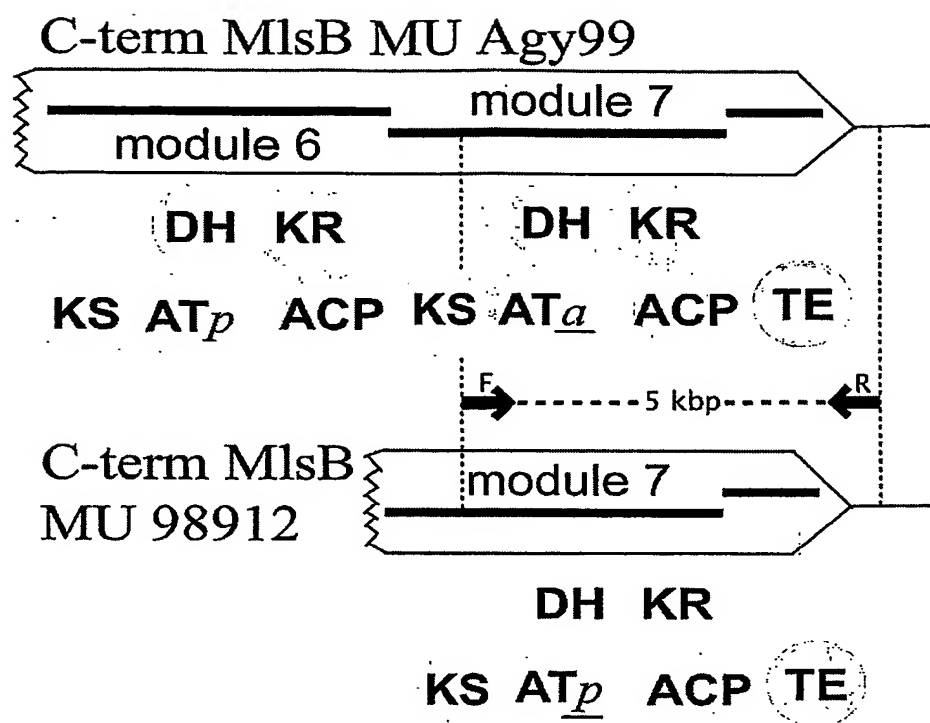


FIGURE 34

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Agy99 -AT6      PHRATITTSIEHHSENNHDTTDALAAALHALANNGTHPLLSRGLLTPOQPGKTVFVFPQGQ
98912 -AT7      PHRATITTSIEHHSENNHDTTDALAAALHALANNGTHPLLSRGLLTPOQPGKTVFVFPQGQ
Agy99 -AT7      PHRATITTSIEHHSENNHDTTDALAAALHALANNGTHPLLSRGLLTPOQPGKTVFVFPQGQ
*****

Agy99 -AT6      SQYPGMGADLYRQFPVFAHALDACDAALQPFTGWSVLAVLHDE--PEAPSLERVDVVQ
98912 -AT7      SQYPGMGADLYRQFPVFAHALDACDAALQPFTGWSVLAVLHDE--PEAPSLERVDVVQ
Agy99 -AT7      SQYPGMGADLYRQFPVFAHALDEVAALNPHLDVALLEVMP SQDTAMAQLLDQTFYAO
*****

Agy99 -AT6      VLFSVMVSLAALWRWAGITPDAVIGHSGQETAAAHVAGALTLPAAAAVVAIRSRVLTDLA
98912 -AT7      VLFSVMVSLAALWRWAGITPDAVIGHSGQETAAAHVAGALTLPAAAAVVAIRSRVLTDLA
Agy99 -AT7      ALFALGTALHRLFTHAGIHPDYLGHSIGETAAAYAAGVLSLODAATLVTSGRLMQSCT
*****

Agy99 -AT6      GAGAMASVLSPEEPLTOLLARWDGKITVAAVNGPASAVVSGDTTATITELLITCEHENIDA
98912 -AT7      GAGAMASVLSPEEPLTOLLARWDGKITVAAVNGPASAVVSGDTTATITELLITCEHENIDA
Agy99 -AT7      PGGTMLALQASEAEVQPLLEGLDHAVSTAAINGATSIVLSGDHDSLEQIGEHFITODRRIT
*****

Agy99 -AT6      RAIPVLYPSHSYPYMEHIRHQFLDELPELTTPRPSTIAMYSTVDGEPHDTAYDTTMTADYW
98912 -AT7      RAIPVLYPSHSYPYMEHIRHQFLDELPELTTPRPSTIAMYSTVDGEPHDTAYDTTMTADYW
Agy99 -AT7      TRLQVSHAFHSPHMDPILEQFRQIAAQLTFSAPTLPILSNLTG--QIARHDQLASPDYW
*****

Agy99 -AT6      YRNIRNTVRFHDTVAALLGAGEQVFLELSPHPVLTQAITDIVEQAGGGGAAPALRKDRP
98912 -AT7      YRNIRNTVRFHDTVAALLGAGEQVFLELSPHPVLTQAITDIVEQAGGGGAAPALRKDRP
Agy99 -AT7      TQQLRNTVRFHDTVAALLGAGEQVFLELSPHPVLTQAITDIVEQAGGGGAAPALRKDRP
*****

Agy99 -AT6      DAVAFAAALGQLHCHGISPSWNVLYCQARPLTLPYAFQHQRYWLLPTAGDFSGANTHAM
98912 -AT7      DAVAFAAALGQLHCHGISPSWNVLYCQARPLTLPYAFQHQRYWLLPTAGDFSGANTHAM
Agy99 -AT7      DAVAFAAALGQLHCHGISPSWNVLYCQARPLTLPYAFQHQRYWLLPTAGDFSGANTHAM
*****

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FIGURE 35

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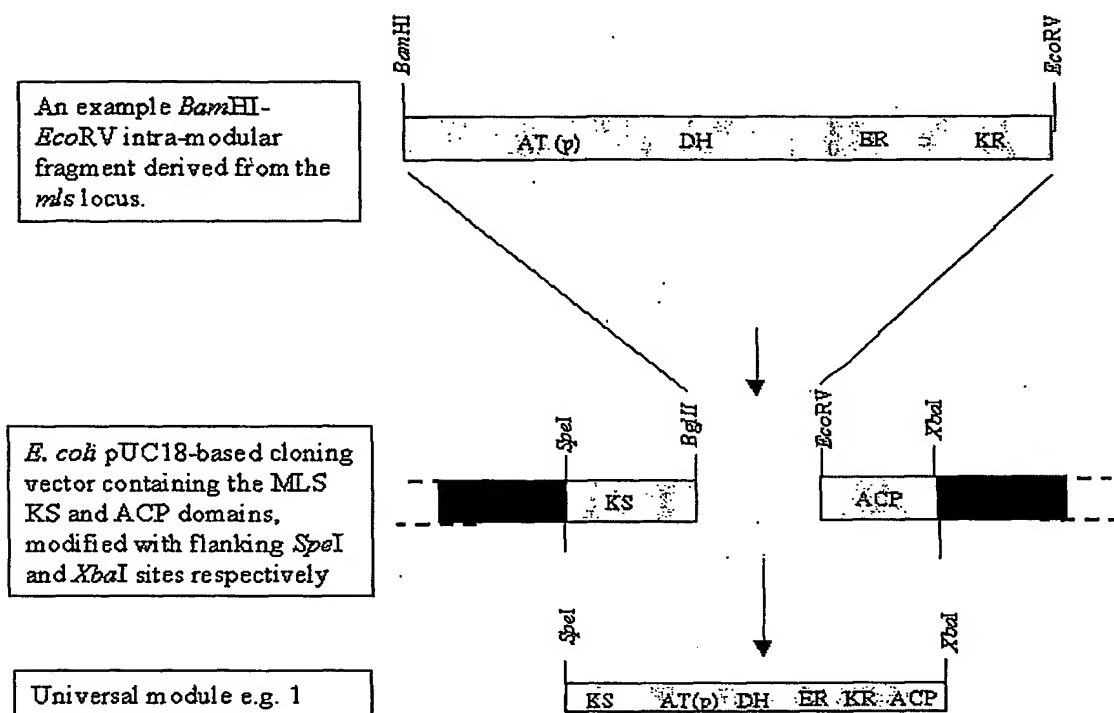


FIGURE 36

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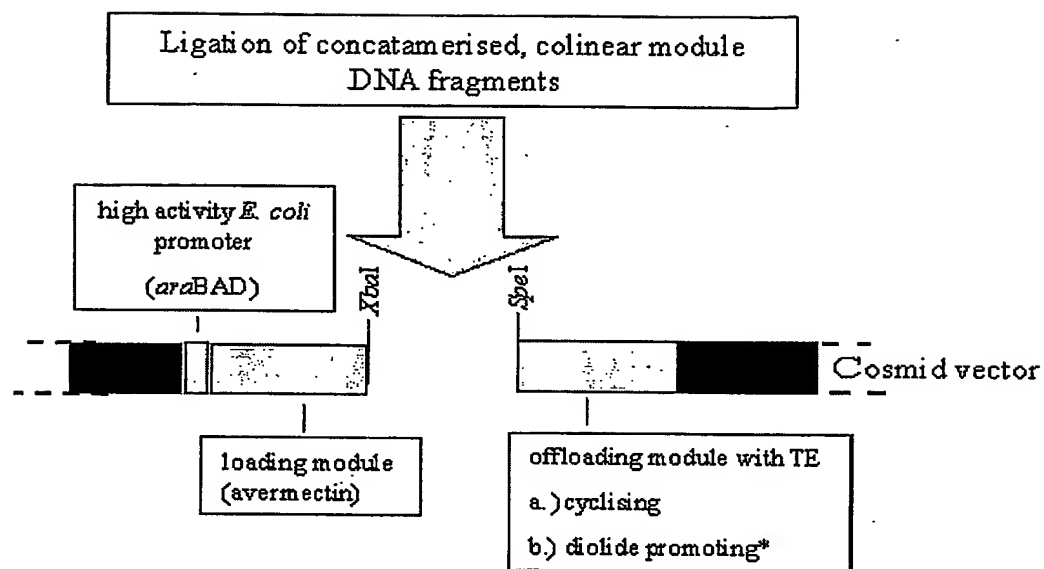


FIGURE 37

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